PUBLIC WORKS NOTES:

1. All requirements relative to City Code and Public Works Design and Construction Standards shall be complied with before release of site plan.
2. All required bonds, escrows, insurances, cash, etc., shall be submitted and approved before release of site plans.
3. Plan and profile shall be submitted (inked mylar size 24" x 36") for all storm sewers and street projects in public right-of-ways or public easements and approved before release of site plans.
4. Contractor is responsible to notify all utility companies before construction begins.
5. All datum shall be based on USC and GS datum.
6. Bonds shall not be released until the receipt and approval by the City of as-built site plans, plans and profiles, etc.
7. All underground utilities and transformers shall be shown on site plan and confirmed per location on as-built plan.
8. The owner shall notify the Director of Public Works in writing three days prior to the beginning of all street or storm sewer work shown on the site plan.
9. The installation of improvements as required in this article shall in no case serve to bind the city to accept such improvements for the maintenance, repair or operation thereof, but such acceptance, shall be subject to the existing regulations concerning the acceptance of each type of improvement.

SHEET INDEX

SHEET #	TITLE
1	COVER SHEET
2	NOTES & TRAIL DETAILS
3	EXISTING CONDITIONS PLAN
4	SITE LAYOUT PLAN
5	GRADING PLAN
6	TRAIL PROFILES AND STORM SEWER DESIGN
7	SWM, BMP & OUTFALL NARRATIVES
7A	BIO-RETENTION SECTIONS
7B	BIO-RETENTION SPECIFICATIONS
8	EROSION AND SEDIMENT CONTROL NARRATIVE AND DETAILS
9	PHASE I EROSION AND SEDIMENT CONTROL /TREE PRESERVATION PLAN
10	PAHSE II EROSION AND SEDIMENT CONTROL /TREE PRESERVATION PLAN
11	TREE PRESERVATION NOTES
12	TREE INVENTORY
13	SKATE AREA
14	SKATE AREA
15	GATEWAY AND SITE FURNISHINGS
16	LANDSCAPE PLAN
17	LANDSCAPE PLAN
18	LANDSCAPE PLAN AND PLANT SCHEDULE
19	LANDSCAPE NOTES & DETAILS
20	LANDSCAPE NOTES & DETAILS
21	CONSENT AGREEMENTS AND EXHIBITS

FIRE MARSHAL NOTES: N/A

All requirements relative to the City Fire Code and Virginia Building Code must be complied with.

1. Use group classification ________________
2. Type of construction ________________

FILE NAME: P:\PROJECT\15907\1-0\Planning\Plans\WEST END\C401 COV.dwg LAYOUT NAME: Plot PLOTTED: Tuesday, September 04, 2012 - 5:05pm

PUBLIC UTILITIES NOTES:

1. All water main and sanitary sewer construction shall comply with the requirements of the standard specification and plans of the Department of Public Utilities.
2. All water mains shall have a minimum cover of 4.0' unless otherwise designated on the plans.
3. All water mains shall be installed 8' north or east of the center line of the street unless otherwise designated on the plans.
4. All water mains shall be Class 52 Ductile iron pipe unless otherwise designated on the plans.
5. All Branch valves shall be strapped.
6. All required sanitary sewer, including laterals and storm sewer shall be installed and their ditches compacted for full depth and approved by the agency having jurisdiction and all streets and easements rough graded prior to the installation of any water mains.
7. No water or sanitary sewer main shall be installed until the proper forms and recorded easements are submitted to the Department of Public Utilities.
8. Plans and profiles of any utility crossing of water mains shall be submitted and approved by the Department of Public Utilities prior to construction.
9. The Developer shall notify the Department of Public Utilities 3 days prior to commencing construction of any water or sanitary sewer mains.
10. If a public water service is obtained for temporary construction water or vehicle wash area, a backflow preventor shall be required.
11. If a private interior fire protection system is to be provided, it shall be subject to the approval of the Department of Public Utilities, Fire Marshal, and shall conform to the City plumbing code.
12. Working water pressure shall be N/A p.s.i.
13. If this property is located in a low pressure area, a booster pump may be required in the building plumbing system. If this property is located in an area where th pressure will exceed 80 p.s.i. a pressure regulating valve shall be installed by the property owner in accordance with the local plumbing code in order to eliminate water hammer and unnecessary wastage of water.
14. The Developer agrees to accept complete responsiblity and all costs for the installation of the mains and appurtenances and for any adjustments in alignments and grade or relocations to existing mains due to the development of this property, any repairs and maintenance therefore which may be required prior to the finish grading and surfacing of the streets an/or easements and final acceptance shall not be considered or granted until after the streets have been surfaced or the easements finally graded.

ARBORIST NOTES:

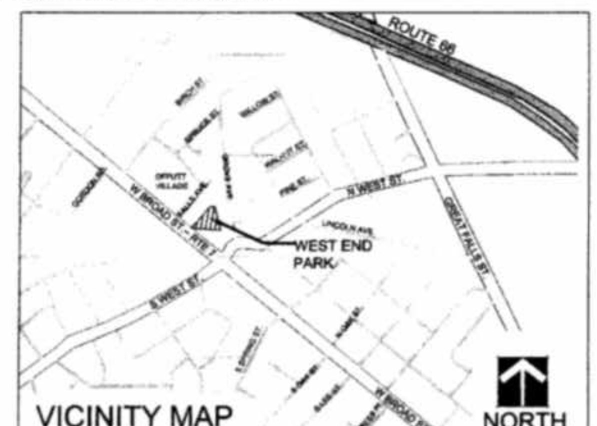
1. All requirements relative to the City Code and City Landscaping Standards shall be complied with.
2. Bonds are required for Existing Trees and new Landscaping prior to final signoff.

RPI MAP INFORMATION:

RPI Map No. N/A
Subdivision
Lot(s) N/A **Block** N/A
RCP Map No. 51-216-087

MISCELLANEOUS NOTES:

1. Upon satisfactory completion of the installation of required improvemnts, as shown on the approved site plan or a section thereof, the developer shall submit to the Department of Environmental Services seven copies of an As-Built site plan certified by the engineer, architect and/or surveyor for approval for conformity with the approved site plan.
2. The As-Built Site Plan shall be submitted and approved prior to the issuance of the final Occupancy Permit.
3. Final approval by the Planning Commission of this site plan shall expire five years after the date of such approval if building permits have not been obtained for construction accordance therewith, unless granted by the City.
4. Any proposed changes or revisions during the execution of or subsequent to implementation of the approved site plan shall be subject to City review and approval.
5. The existing easement have been reviewed and determined that the proposed the site improvements are consistent with the terms of these agreements. In addition, Dominion Power and Verizon have reviewed the proposed improvements and provided consent agreements that are included on sheet 21.
6. Northern Virginia Regional Park Authority (NVRPA) has reviewed this plan and is in agreement with the site improvements. A letter of permission is provided in sheet 21.
7. No Resource Protection Area (RPA) is mapped on the site. The site is in a Resource Management Area (RMA) and is in compliance with the City's Chesapeake Bay preservation district requirements. See site tabulation on sheet 2 for impervious cover calculations.
8. The site is in the Tripps Run watershed.



SCALE: 1" = 1,000'

RECORDATION DATA:

Easement(s): Existing easements are shown on Sheet 3. No new easements are proposed.

Subdivision(s):

Dedication(s):

COMMONWEALTH OF VIRGINIA DAVID H. STEIGLER Cert. No. 609 9/6/12 LANDSCAPE ARCHITECT

Certification

COMMONWEALTH OF VIRGINIA EDWARD G. VENDITTI Lic. No. 16395 09/05/12 PROFESSIONAL ENGINEER

Signature

APPLICATION FOR REVIEW & APPROVAL BY
CITY OF FALLS CHURCH, VIRGINIA

APPROVALS

PLANNING COMMISSION FINAL APPROVAL:

(Date and Conditions of Approval)

On December 7, 2009, the Planning Commission approved site plan application #20090407 with a condition that staff administratively approve a resubmission that addressed the following:

Additional information regarding stormwater quantity control/outfall adequacy to verify that the analysis complies with all Code requirements.
B. Inclusion of the NVRPA agreement and the most current version of all other agreements shown on Sheet 21.
C. Information deemed by staff to meet the requirements of Section 48-1137(4) of the [City] Code (a signed statement by the owner of each property subject to the site plan indicating that the owner joins in the site plan and agrees to be bound by all site plan requirements).

(See Sheet 3 for continuation of Planning Commission conditions)

VARIANCES(With date(s) of Approval by BZA):

N/A

BOND(S) POSTED(Date(s) and Amount(s)):

FINAL STAFF APPROVAL:

	Signature:	Date
Planning		
Public Works		
Public Utilities		

SUBSEQUENT ACTIONS:

BUILDING PERMIT ISSUED (Date): ________________
AS-BUILT APPROVED (Date): ________________
COMMON AREA DOCUMENTS APPROVED (Date): ________________
LANDSCAPE ESCROW ACCEPTED (Date): ________________
CERTIFICATE OF OCCUPANCY (Date): ________________
OTHER:

Revisions Approved prior to Certificate of Occupancy:

Description	Date Approved

WEST END PARK
Name of Project
1040 West Broad Street
Address
Falls Church, Virginia

City of Falls Church, Virginia (703) 248-5001
Owner — Telephone No.
223 Little Falls Street, Falls Church, Virginia
Address
Patton Harris Rust & Associates (703) 449-6700
Name of Certified Engineer or Surveyor Submitting Plan — Telephone No.
14532 Lee Road, Chantilly, VA 20151-1679
Address

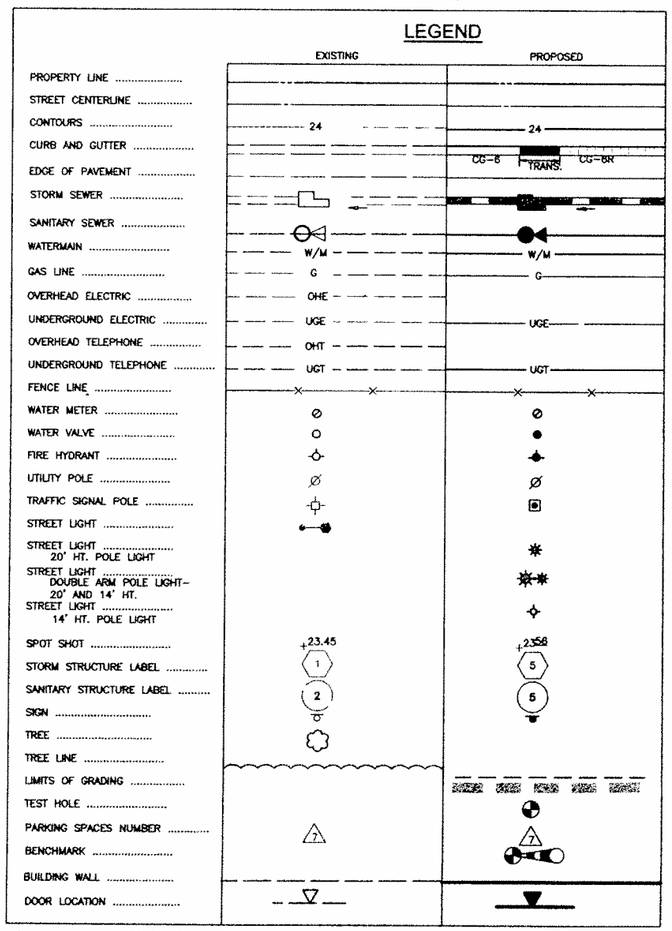
Site Plan S- 20090407 **Sheet** 1 **of** 21 **Sheets**

SITE PLAN TABULATIONS

PARCEL A-1		87,082 S.F. (2.00 AC.)
EXISTING SWALE ON NVRPA PARCEL		5,600 S.F. (0.13 AC)
ZONE	R-1B	
EXISTING USE	PARK/VACANT	
PROPOSED USE	PARK	
BUILDING HEIGHT	45 FT.	
LOT COVERAGE	30%	
YARDS:		
FRONT	25 FT.	
SIDE	20 FT.	
REAR	40 FT.	

IMPERVIOUS COVER	AREA S.F.	AREA AC.	% IMPERVIOUS COVER	IMPERVIOUS COVER AC.
EXISTING CONDITION:				
STONE DUST TRAILS	1,730	0.04	50%	0.02
GRASS, GARDEN BEDS, MULCH, NATURAL AREAS	85,352	1.96	0%	0.00
EXISTING SWALE ON NVRPA PARCEL	5,800	0.13	0%	0.00
TOTAL	90,950	2.09	1%	0.02
PROPOSED CONDITION:				
STONE DUST TRAILS	2,690	0.06	50%	0.03
PAVED TRAILS	4,086	0.09	100%	0.09
SKATE AREA	2,122	0.05	100%	0.05
MISCELLANEOUS CONCRETE PADS	502	0.00	100%	0.00
GRASS, GARDEN BEDS, MULCH, NATURAL AREAS	78,052	1.79	0%	0.00
RE-VEGETATION TO EXISTING SWALE ON NVRPA PARCEL	5,600	0.13	0%	0.00
TOTAL	92,692	2.13	8%	0.18
INCREASE			7%	

LEGEND



GENERAL NOTES

1. THE PROPERTY SHOWN HEREON IS IN THE NAME OF THE CITY OF FALLS CHURCH VIRGIINA .
2. BOUNDARY INFORMATION SHOWN IS TAKEN FROM EXISTING CONDITIONS SURVEY PREPARED BY WALTER L. PHILIPS, INC AND DATED OCTOBER 4, 2004 AS WELL AS INSTRUMENTS OF RECORD. ALL OTHER INFORMATION SHOWN IS FROM A FIELD SURVEY PERFORMED BY PHR+A AND DATED JULY 9, 2008.
3. THE HORIZONTAL DATUM IS NAD 83.
   THE VERTICAL DATUM IS NGVD 29.
4. TITLE IMFORMATION WAS FURNISHED BY THE CITY, DATED 5-11-2005. THEREFORE ALL ENCUMBERANCES MAY NOT BE SHOWN.
5. CONTOURS ARE SHOWN AT A ONE-FOOT INTERVAL.
6. BM #1: ON W. &O.D. TRAIL BY EXISTING PARK ENTRANCE.:340.27
   BM #2: AT THE NORTHERN MOST PORTION ON THE PARK: 347.35
7. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF FALLS CHURCH, VIRGINIA DEPARTMENT OF TRANSPORTATION AND/OR ADA STANDARDS AND SPECIFICATIONS, UNLESS OTHERWISE NOTED.
8. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO AND DURING CONSTRUCTION AND NOTIFY PATTON HARRIS RUST AND ASSOCIATES AT (703)449-6700 IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND APPROVED PLAN. SHOULD CONFLICTS BE DISCOVERED WITHIN THE INFORMATION PRESENTED IN THIS PLAN, THE CONTRACTOR SHALL CONTACT PHR&A TO DISCUSS/RESOLVE SAID CONFLICTS.
9. EXISTING UNDERGROUND UTILITY INFORMATION TAKEN FROM AVAILABLE RECORDS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND FOR ANY DAMAGES THAT MAY OCCUR DUE TO THEIR FAILURE TO LOCATE AND PROTECT THESE UNDERGROUND FACILITIES.
10. ⊕ DENOTES TEST HOLE REQUIRED TO DETERMINE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIGGING OF TEST HOLES PRIOR TO BEGINNING OF ANY CONSTRUCTION ON THE PROJECT. IF CONFLICTS ARE DISCOVERED AS A RESULT OF TEST HOLE FINDINGS, NOTIFY PATTON HARRIS RUST AND ASSOCIATES AT (703)449-6700 IMMEDIATELY.
11. ALL UTILITIES ARE TO BE RELOCATED AT THE CONTRACTOR'S EXPENSE, INCLUSIVE OF ANY NECESSARY POLE RELOCATIONS.
12. POLES ARE TO BE RELOCATED PRIOR TO CONSTRUCTION BY THE CONTRACTOR.
13. ALL STORM SEWER SHALL BE CLASS IV UNLESS OTHERWISE NOTED.
14. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS AND UTILITIES WHICH OCCUR AS A RESULT OF CONSTRUCTION OF THE DEVELOPMENT COVERED BY THIS SITE PLAN, WITHIN OR CONTIGUOUS TO EXISTING RIGHT-OF-WAY.
15. CONTROLLED FILLS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY METHOD "A" PER STANDARD PROCTOR AASHTO T-99 , ASTM D698, OR VTM-1 AS APPLICABLE. DENSITY SHALL BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER AND RESULTS SUBMITTED TO CITY OF FALLS CHURCH PRIOR TO PAVEMENT CONSTRUCTION. IF A GEOTECHNICAL REPORT HAS BEEN PREPARED, IT SHOULD SUPERSEDE THE REQUIREMENTS IN THIS NOTE.
16. ALL BASE, SUBBASE AND SUBGRADE MATERIAL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT, WITHIN A TOLERANCE OF ± 2% OF OPTIMUM.
17. ALL FINISHED GRADING, SEEDING, SODDING, OR PAVING SHALL BE DONE IN SUCH A MANNER AS TO PRECLUDE THE PONDING OF WATER ON THE SITE, PARTICULARLY ADJACENT TO BUILDING AND STORM INLETS.
18. TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL FEATURES OF THE PROPOSED CONSTRUCTION. FOR EXACT DETAILS AT ANY GIVEN LOCATION, SEE PLANS.
19. EXCAVATION SUPPORT SYSTEMS SHALL CONFORM TO THE PROVISIONS OF OSHA CONSTRUCTION STANDARD 29 CFR PART 1926 SUBPART P.
20. AT LOCATIONS WHERE THE FINAL SURFACE COURSE OF ASPHALT PAVEMENT IS TO BE FEATHERED INTO THE EXISTING SURFACE COURSE, THE EXISTING SURFACE COURSE IS TO BE MILLED TO A MINIMUM DEPTH OF 1" AND A TACK COAT APPLIED PRIOR TO FINAL PAVING TO INSURE A SMOOTH, WELL BONDED JOINT.
21. THE APPROVAL OF THIS PLAN DOES NOT CONSTITUTE THE APPROVAL OF FUTURE WORK.
22. NO GRAVE, OBJECT OR STRUCTURE MARKING A PLACE OF BURIAL IS KNOWN TO EXIST IN THE AREAS PROPOSED TO BE DISTURBED BY THIS SITE PLAN.
23. WHILE THIS PLAN MAY SHOW THE APPROXIMATE RE-ALIGNMENT OF ELECTRIC, GAS, COMMUNICATIONS AND DATA LINES, DETAILED CONSTRUCTION DRAWINGS AND SPECIFICATIONS WILL BE GENERATED FOR THOSE IMPROVEMENTS BY RESPECTIVE UTILITY COMPANIES.
24. CONTRACTOR TO EXERCISE CAUTION DURING BLASTING OPERATIONS AND SHALL COMPLY WITH COUNTY AND STATE REQUIREMENTS AS APPLICABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE SURROUNDING PROPERTIES.
25. CONCRETE PAVING WITHIN THE PARK SHALL HAVE SCORING GRID PATTERN AS SHOWN ON THE PLANS. CONCRETE SHALL HAVE TOOLED JOINTS AND 2" TOOLED EDGE AT SCORE JOINTS, PER DETAIL 4 ON THIS SHEET. EXPANSION JOINTS SHALL BE LOCATED AT PERIMETER OF STRUCTURES, AND A MINIMUM OF 30'-0" O.C. WHERE POSSIBLE. EXPANSION JOINTS SHALL BE LOCATED TO ALIGN WITH SCORING PATTERN OR AT CHANGE IN MATERIALS.
26. ALL TRAILS AND PAVED SURFACES SHALL BE ADA "ACCESSIBLE ROUTES" AND HAVE A MAXIMUM CROSS SLOPE OF 2% AND A MAXIMUM LONGITUDINAL SLOPE OF 5%. THE SLOPE OF THE SUB-GRADE MATERIAL MUST BE APPROVED BY RECREATION AND PARKS PERSONNEL PRIOR TO PROCEEDING WITH CONSTRUCTION.

TEMPORARY TRAFFIC CONTROL NOTES

1. ALL CONSTRUCTION ACCESS ENTERING AND LEAVING THE SITE SHALL BE THROUGH THE APPROVED CONSTRUCTION ENTRANCE ONTO WEST BROAD STREET - ROUTE 7, AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLANS.
2. NO ROAD IMPROVEMENTS ARE PROPOSED UNDER THIS PROJECT.
3. CONTRACTOR SHALL SCHEDULE AND COORDINATE ALL WORK REGARDING TEMPORARY TRAFFIC CONTROLS WITH THE CITY OF FALLS CHURCH.
4. THE TRAFFIC CONTROL DEVICES, SUCH AS SIGNING, AND OTHER SAFETY MEASURES SHALL BE IN CONFORMANCE WITH THE CURRENT VERSION OF THE FOLLOWING:
   a. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
   b. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS
   c. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS
   d. THE VIRGINIA WORK AREA PROTECTION MANUAL
   e. VIRGINIA SUPPLIMENT TO THE MUTCD
5. CONSTRUCTION TRAFFIC SHALL USE A FLAGMAN AT ALL TIMES WHEN USING THE CONSTRUCTION ENTERANCE TO ENSURE PEDESTRIAN VEHICULAR TRAFFIC AND PEDESTRIAN SAFETY. SHOULD TEMPORARY LANE CLOSURES BE REQUIRED, THEY SHALL BE IN CONFORMANCE WITH THE GUIDELINES FROM THE CURRENT EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL, 2005 FIGURE TTC-18.0 (FLAGGING OPERATIONS FOR A TWO LANE ROAD) WITH FLAGGER STATION LOCATIONS IN ACCORDANCE WITH FIGURE TTC-22.0.
6. THE EXISTING SIDEWALK SHALL BE OPEN TO PEDESTRIAN USE DURING THE CONSTRUCTION PERIOD.
7. THE CONTRACTOR SHALL NOT OBSTRUCT OR CLOSE ANY TRAVEL LANE WITHOUT THE PERMISSION FROM THE CITY OF FALLS CHURCH.

SITE PLAN CONFORMANCE WITH THE WEST END PARK MASTER PLAN

IN FEBRUARY OF 2007, THE RECREATION & PARKS ADVISORY BOARD ADOPTED THE MASTER PLAN FOR WEST END PARK. THE PLAN WAS ADOPTED AFTER A SERIES OF PUBLIC HEARINGS WITH NEIGHBORS OF THE PARK AND OTHER INTERESTED PARK USERS. THE ADOPTED MASTER PLAN SERVED AS THE GUIDE FOR THE DEVELOPMENT OF THE WEST END PARK SITE PLAN. THE SITE PLAN WAS PRESENTED TO, AND ENDORSED BY, THE RECREATION & PARKS ADVISORY BOARD AND THE NEIGHBORS OF THE PARK WHO ATTENDED AN APRIL 1, 2009, PUBLIC HEARING TO REVIEW THE PROPOSED SITE PLAN. COMMENTS AND SUGGESTIONS RECEIVED AT THE PUBLIC HEARING HAVE BEEN INCORPORATED INTO THE PLAN.

THE WEST END PARK SITE PLAN CONFORMS TO THE MASTER PLAN FOR THE PARK. LISTED BELOW ARE SOME OF THE WAYS THE SITE PLAN MEETS OBJECTIVES OF THE MASTER PLAN:

- PRESERVES AND PROTECTS THE PARK'S NATURAL RESOURCES.
- PROVIDES A VARIETY OF PASSIVE AND ACTIVE RECREATIONAL ACTIVITIES FOR ALL AGE GROUPS.
- MAINTAINS THE EXISTING FACILITIES AND AMENITIES SUCH AS THE PICNIC TABLES, PLAYGROUND EQUIPMENT, BARBECUE GRILLS AND WALKING TRAIL.
- LANDSCAPED BEDS, CONSISTENT WITH THOSE IN THE OLDER PORTIONS OF THE PARK WILL BE ESTABLISHED IN THE NEW PARCEL IN THE PARK. THESE BEDS WILL FEATURE A MIX OF NATIVE SHRUBS, PERENNIALS, FLOWERS AND TREES TO MIRROR THE AESTHETICS OF THE EXISTING WEST END PARK.
- A NEW PARK SIGN THAT WILL SERVE AS A GATEWAY TO THE PARK WILL BE INSTALLED AND AN ENTRYWAY CREATED ON BROAD STREET MAKING THE PARK VISIBLE AND RECOGNIZABLE FROM BROAD STREET.
- LANDSCAPING WILL BE INSTALLED ALONG THE WESTERN BOUNDARY OF THE PARK AND ALONG THE DITCH THAT FRONTS THE PARK TO BUFFER THE PARK FROM THE NOISE AND SIGHT LINES OF THE CAR WASH AND AUTOMOTIVE REPAIR PARKING LOT.
- A PATH WILL BE INSTALLED THAT WILL PROVIDE PEDESTRIAN ACCESS TO THE NEW SECTION OF THE PARK.
- A SKATEBOARD FEATURE WILL BE ADDED TO THE PARK.
- THE SMALL OPEN SPACE IN WILL BE MAINTAINED FOR INFORMAL DROP-IN USE.

WEST END PARK IS THE ONLY PARK OF ITS KIND IN THE CITY OF FALLS CHURCH. ITS ARBORETUM LIKE SETTING IS UNIQUE AND WITH THE SITE PLAN WILL BE PRESERVED, EVEN AS THE PARK EXPANDS AND NEW AMENITIES ARE ADDED. THE PARK PROVIDES VISITORS A QUIET, CONTEMPLATIVE SETTING, FULL OF COLOR AND NATURAL BEAUTY CREATED BY LANDSCAPE BEDS BEAMING WITH AN ASSORTMENT OF NATIVE PLANTINGS.

THE CURRENT PLAYGROUND EQUIPMENT WILL BE MAINTAINED. ENHANCEMENTS TO THE PARK WILL FOCUS ON DUPLICATING THE "GARDEN LIKE" CHARACTER OF THE OLD PORTION OF THE PARK. NEW INITIATIVES WILL IMPROVE ACCESS, ESTABLISH LANDSCAPE BUFFERS BETWEEN THE PARK AND THE BUSINESSES ADJACENT TO THE PARK AND ADD A SMALL-SCALE SKATEBOARD FEATURE TO THE PARK.

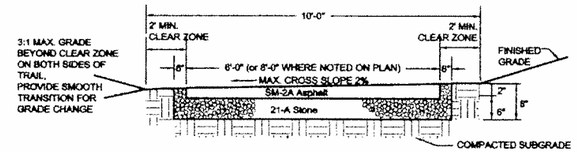
WEST END PARK JUSTIFICATION FOR NO PARKING

THE SITE PLAN FOR WEST END PARK DOES NOT INCLUDE ANY OFF STREET PARKING. THE DECISION TO NOT INCLUDE PARKING WAS A DELIBERATE ONE IN THE CITY'S COMPREHENSIVE PLAN, WEST END PARK IS CLASSIFIED AS A "NEIGHBORHOOD PARK". BY DEFINITION NEIGHBORHOOD PARKS ARE "WALK TO" PARKS THAT PRIMARILY SERVE THE SURROUNDING NEIGHBORHOOD. THESE PARKS HAVE AMENITIES FOR PASSIVE LEISURE ACTIVITIES AND INFORMAL ACTIVE RECREATION BUT NOT FOR ORGANIZED SCHEDULED ATHLETIC ACTIVITIES. IN FALLS CHURCH THE SERVICE AREA OF SUCH PARKS IS BETWEEN ONE-QUARTER OF A MILE AND ONE-HALF OF A MILE.

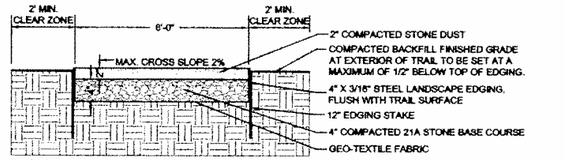
NONE OF THE PARKS IN FALLS CHURCH CLASSIFIED AS "NEIGHBORHOOD PARKS" PROVIDE OFF-STREET PARKING. SINCE THIS NEIGHBORHOOD PARK LIKE MOST IN THE CITY IS 2 ACRES OR LESS IN SIZE, TAKING OPEN SPACE TO PROVIDE OFF-STREET PARKING CONFLICTS WITH THE PARKS MASTER PLANS GOAL TO PRESERVE OPEN SPACE. PARKING SPACES ALSO CREATE MORE STORM WATER RUN-OFF WHEN EVERY EFFORT IS BEING MADE TO REDUCE RUN-OFF.

IN ADDITION, PROVIDING OFF-STREET PARKING ENCOURAGES PEOPLE TO DRIVE RATHER THAN WALK OR BIKE TO WEST END PARK. THE CLOSE PROXIMITY OF THE W&OD BIKE TRAIL MAKES WEST END PARK A SITE THE CITY SHOULD MAKE EVERY EFFORT TO ENCOURAGE VISITORS TO THE PARK TO EITHER WALK OR BIKE TO THE PARK.

FINALLY, IF SOMEONE WERE TO DECIDE TO DRIVE TO THE PARK THERE IS AMPLE ON STREET PARKING ON FALLS AVENUE AND GROVE AVENUE.

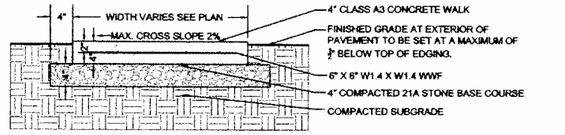


1 ASPHALT TRAIL TYPICAL SECTION
SCALE: N/A

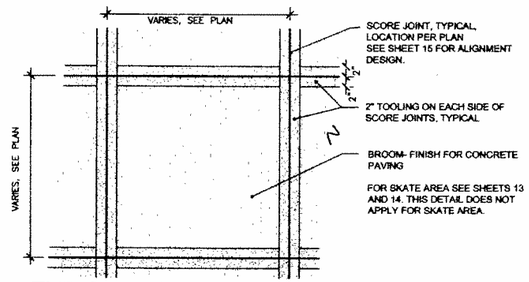


REFURBISHING OF EXISTING STONE DUST TRAIL SHALL INCLUDE: 1. REPLACEMENT OF EXISTING WOOD EDGING WITH STEEL EDGING, AND 2. SUPPLEMENTAL STONE DUST TOPPING TO PRECLUDE PONDING.

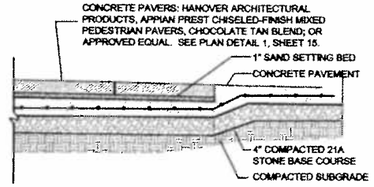
2 STONE DUST TRAIL TYPICAL SECTION
SCALE: N/A



3 CONCRETE PAVEMENT TYPICAL SECTION
SCALE: N/A



4 TYPICAL TOOLING DETAIL FOR CONCRETE PAVING
SCALE: N/A



5 PAVER TYPICAL SECTION
SCALE: N/A

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
	REVISION					

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
NOTES AND TRAIL DETAILS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CITY PLAN # 20090407

DESIGN	PHR+A	SURVEY	PHR+A
DRAWN	SME	DATE	JUNE 17, 2009
CHECKED	DHS	SCALE	AS SHOWN
SHEET	C402NOTE 2 OF 21	FILE NO.	15907-1-0

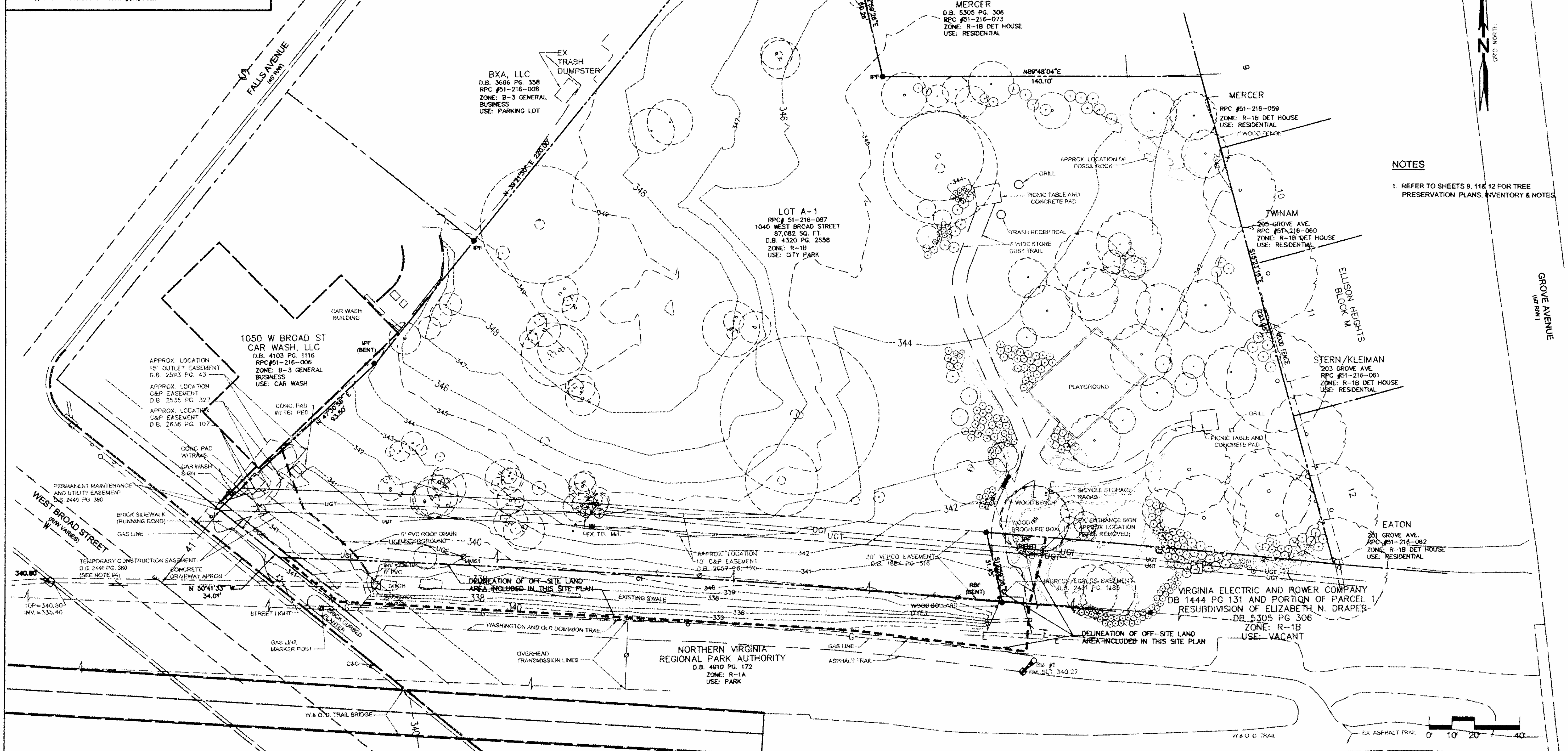
FILE NAME: P:\PROJECTS\15907\1-0\Planning\Plans\WEST END\C402NOTES.dwg LAYOUT NAME: PLOT PLOTTED: Wednesday, September 05, 2012 - 1:25pm

Continuation of Planning Commission conditions from Sheet 1

On December 7, 2009, the Planning Commission approved site plan application #20090407 with a condition that staff administratively approve a resubmission that addressed the following:

(continued)

D. A calculation of the land area included in the improvement to the swale area and, if applicable based on the calculation, a Chesapeake Bay Interdisciplinary Review Team (CBIRT) review of that proposed work.
E. Delineation of the land area subject to the site plan.
F. Parcel information for the VEPCO-owned property.
G. Revision of the limits of clearing and grading to include the swale area.
H. Edits to Site Tabulations on Sheet 2 to differentiate Code provisions/ requirements from information referring to what is being proposed in the site plan application.
I. Removal of the word "Utility" from title for Sheet 21.
J. Removal of the West Broad Street streetscape planter from the scope of work.
K. Use of super silt fencing next to BXA LLC property during the construction process.
L. [Not withstanding the proposed bike bollards,] Addition of more than one bike rack or other bike storage accommodation and consideration of a different design [(a design other than bike bollards) for the additional bike rack(s) or bike storage].
M. Finalized colors of the proposed site furnishings consistent with comments provided by the AAB.
N. Signage at the West Broad Street gateway indicating that the park closes at dark.
O. Possible relocation of the trash and recycling receptacles near the West Broad Street gateway.
P. Approved access easements on abutting properties.



LEGEND

EXISTING TREES FOR TREE NOTES SEE SHEET XX OF XX

EXISTING TREES OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN

EXISTING SHRUBS OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN

EXISTING GROUNDCOVER OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN

CURVE TABLE FOR PROPERTY LINE

CURVE	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	CHORD
C1	319.05	5783.15	159.57	3°09'40"	N85°54'40"W	319.01
C2	153.54	8675.00	76.77	1°00'51"	N84°24'52"W	153.54

NOTES

1. REFER TO SHEETS 9, 11& 12 FOR TREE PRESERVATION PLANS, INVENTORY & NOTES.

CITY PLAN # 20090407

NO.	DESCRIPTION	DATE	REVS'D	REW'D	APRV'D	DATE

REVISION

COMMONWEALTH OF VIRGINIA PROFESSIONAL SEAL — DAVID H. STEIGERS Cert. No. 600 9/6/12 LANDSCAPE ARCHITECT

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
EXISTING CONDITIONS PLAN

Patton Harris Rust & Associates,pc
Engineers. Surveyors. Planners. Landscape Architects.
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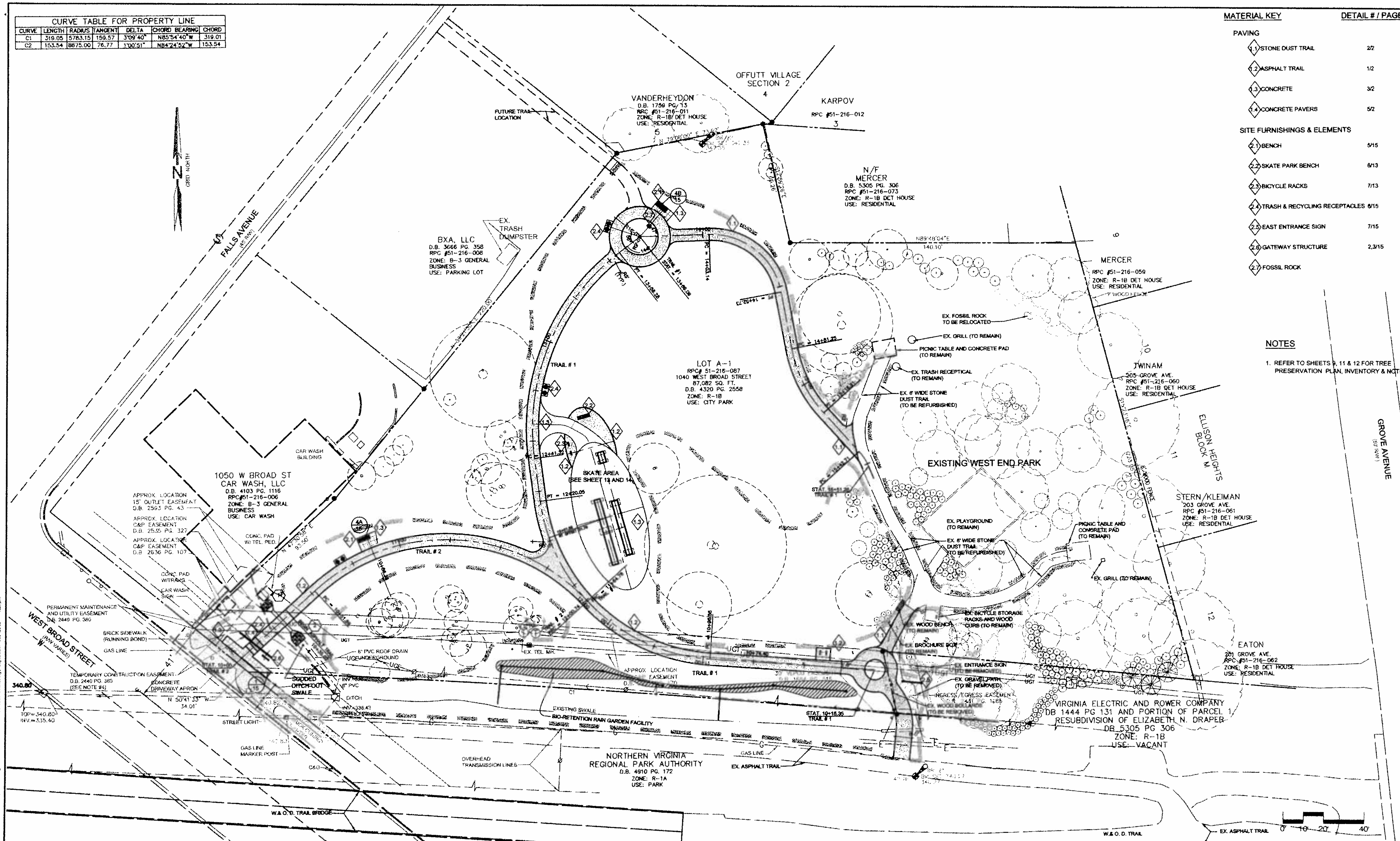
DESIGN	PHR+A	SURVEY	PHR+A
DRAWN	SME	DATE	JUNE 17, 2009
CHECKED	DHS	SCALE	1" = 20'
SHEET C403EX_COND	3 OF 21	FILE NO.	15907-1-0

CURVE TABLE FOR PROPERTY LINE						
CURVE	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	CHORD
C1	319.05	5783.15	159.57	3°09'40"	N85°54'40"W	319.01
C2	153.54	8875.00	76.77	1°00'51"	N84°24'52"W	153.54

MATERIAL KEY	DETAIL # / PAGE
PAVING	
1.1 STONE DUST TRAIL	2/2
1.2 ASPHALT TRAIL	1/2
1.3 CONCRETE	3/2
1.4 CONCRETE PAVERS	5/2
SITE FURNISHINGS & ELEMENTS	
2.1 BENCH	5/15
2.2 SKATE PARK BENCH	6/13
2.3 BICYCLE RACKS	7/13
2.4 TRASH & RECYCLING RECEPTACLES	6/15
2.5 EAST ENTRANCE SIGN	7/15
2.6 GATEWAY STRUCTURE	2,3/15
2.7 FOSSIL ROCK	

NOTES

1. REFER TO SHEETS 9, 11 & 12 FOR TREE PRESERVATION PLAN, INVENTORY & NOTES.



NO.	DESCRIPTION	DATE	REVS'D	REVI'D	APPV'D	DATE
REVISION						

DAVID H. STEIGLER Cert. No. 609 9/6/12 LANDSCAPE ARCHITECT

PROJECT: WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE: SITE LAYOUT PLAN

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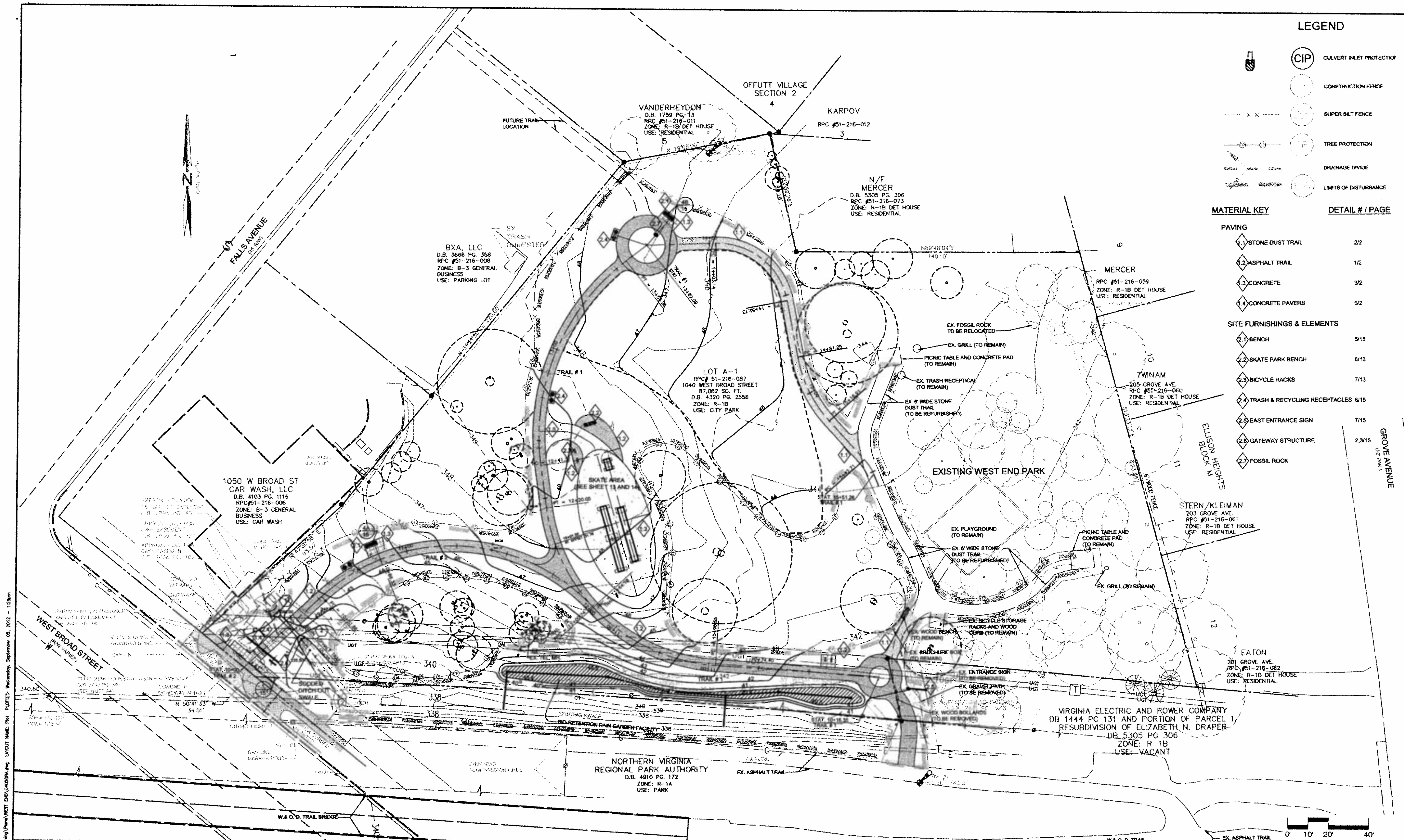
CITY PLAN # 20090407

DESIGN PHR+A	SURVEY PHR+A
DRAWN SME	DATE JUNE 17, 2009
CHECKED DHS	SCALE 1" = 20'
SHEET C404SIT 4 OF 21	FILE NO. 15907-1-0



FILE NAME: P:\PROJECT\15907\1-0\Planning\Plans\WEST END\C405GRA.dwg LAYOUT NAME: Plot PLOTTED: Wednesday, September 05, 2012 - 1:28pm

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPV'D	DATE

REVISION

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — DAVID H. STEIGLER — Cert. No. 609 — 9/4/12 — LANDSCAPE ARCHITECT

PROJECT

WEST END PARK IMPROVEMENTS

CITY OF FALLS CHURCH, VA

TITLE

GRADING PLAN

Patton Harris Rust & Associates,pc
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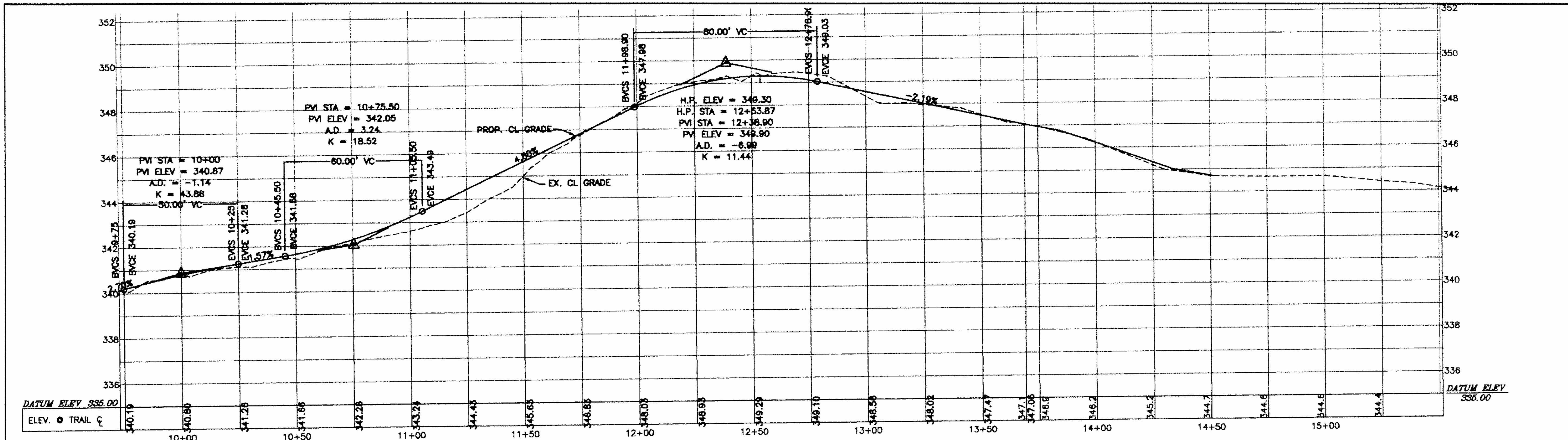
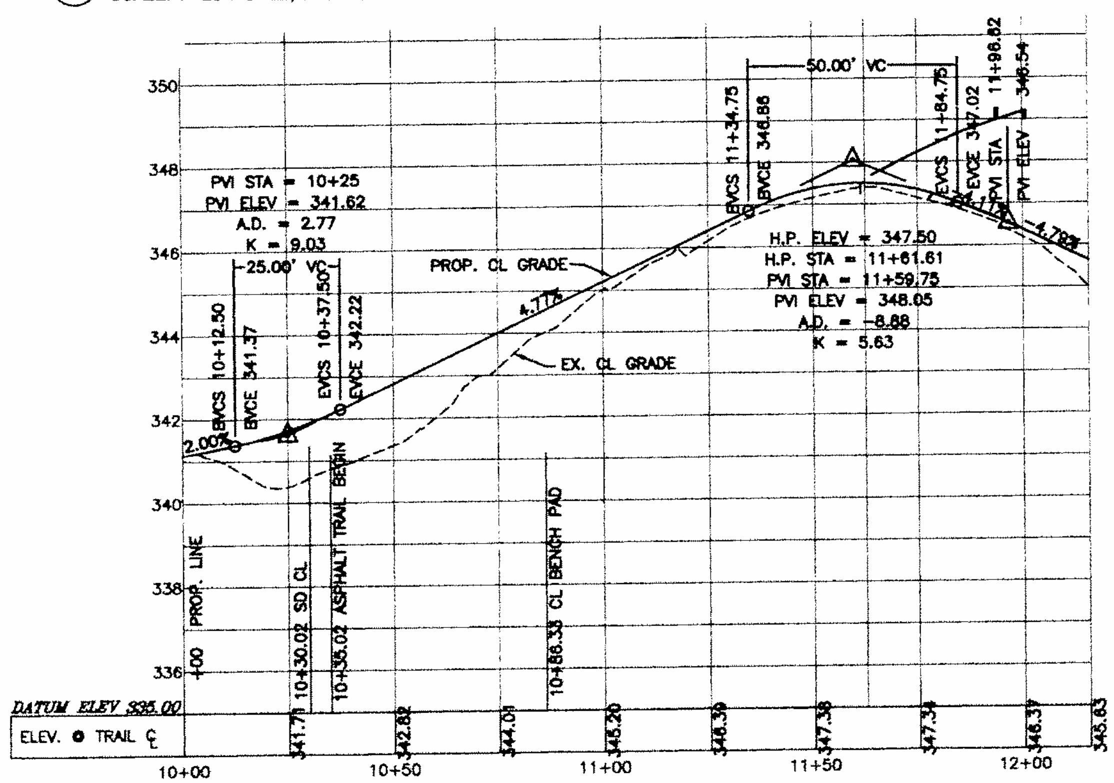
CITY PLAN # 20090407

DESIGN PHR+A	SURVEY PHR+A
DRAWN SME	DATE JUNE 17, 2009
CHECKED DHS	SCALE 1" = 20'
SHEET C405GRA 5 OF 21	FILE NO. 15907-1-0



① TRAIL # 1 PROFILE

SCALE: 1"=20' HORIZ.; 1"=2' VERT.



② TRAIL # 2 PROFILE

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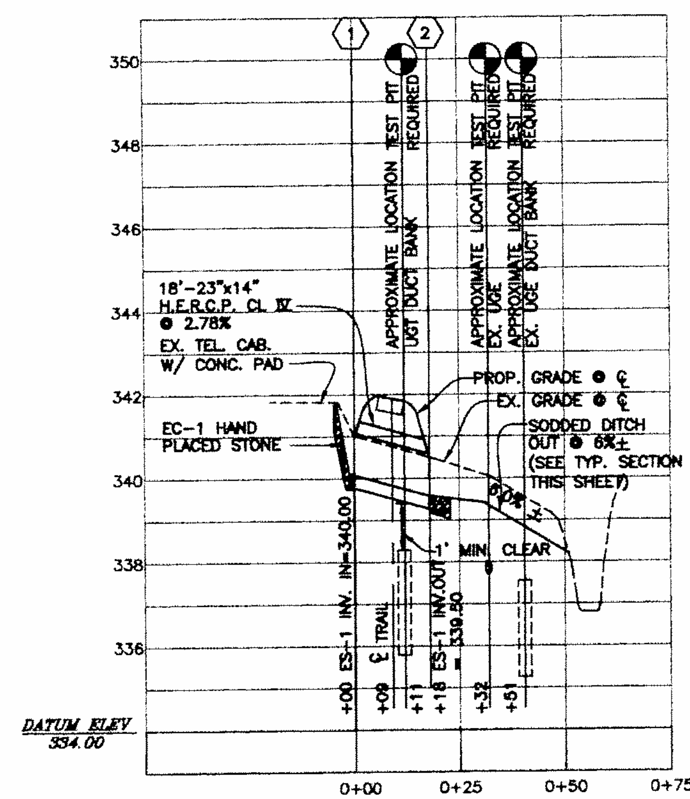
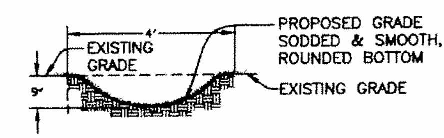


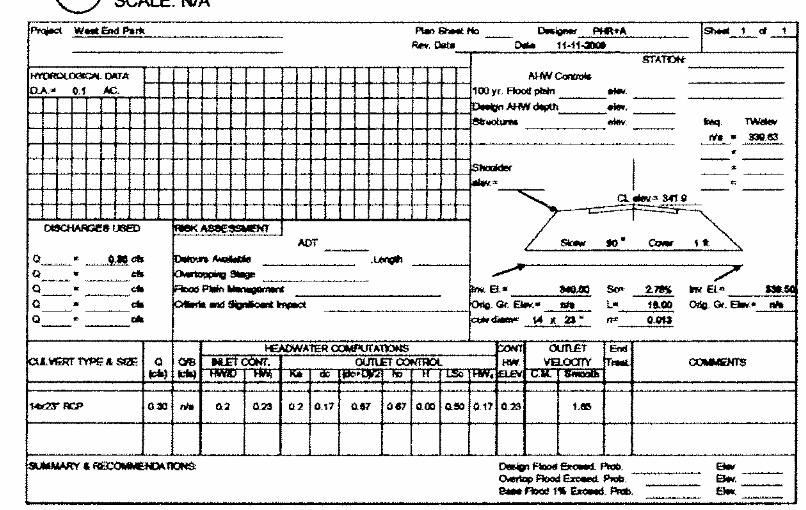
③ STORM SEWER PROFILE

SCALE: 1"=20' HORIZ.; 1"=2' VERT.



④ TYPICAL SECTION FOR DITCH-OUT

SCALE: N/A



⑤ STORM CULVERTCOMPUTATIONS

NO.	DESCRIPTION	DATE	REVS'D	REW'D	APRV'D	DATE
REVISION						

EDWARD G. VENDITTI Lic. No. 16395 PROFESSIONAL ENGINEER

PROJECT

WEST END PARK IMPROVEMENTS

CITY OF FALLS CHURCH, VA

TITLE

TRAIL PROFILES AND STORM SEWER DESIGN

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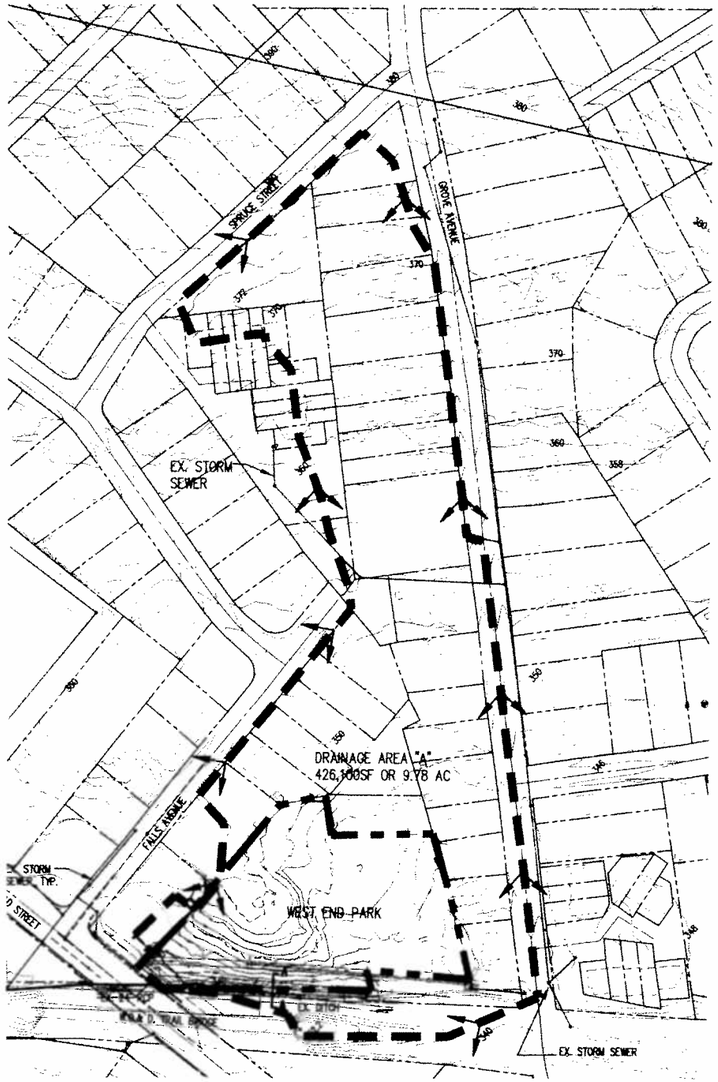
CITY PLAN # 20090407

DESIGN PHR+A	SURVEY PHR+A
DRAWN SME	DATE JUNE 17, 2009
CHECKED EGV	SCALE AS SHOWN
SHEET C406PRO 6 OF 21	FILE NO. 15907-1-0



1 DRAINAGE AREA MAP

SCALE: 1" = 100'

SOURCE: CITY OF FALLS CHURCH GIS

Drainage Shed Calculations

Q = C x i x A

C = 0.40
A = 9.78
i_{10yr} = 5.10 in/hr (t_c=15 min)
i_{2yr} = 3.9 in/hr (t_c=15 min)

Q_{10yr} = (0.4) (5.1) (9.78) = 19.95cfs
Q_{2yr} = (0.4) (3.9) (9.78) = 15.26cfs

LEGEND

DRAINAGE DIVIDE

STORM WATER MANAGEMENT NARRATIVE:

THE CONDITION OF THE EXISTING SITE IS CURRENTLY DEVELOPED AS A PARK FOR THE EASTERN PORTION OF THE SITE AND UNDEVELOPED FOR THE WESTERN PORTION OF THE SITE. THE DEVELOPED PARK AREA CONSISTS OF EXISTING GARDENS LAWN AND NATURAL AREAS, AN EXISTING STONE DUST TRAIL AND A MULCH PLAYGROUND SURFACE. THE PROPOSED IMPROVEMENTS CONSIST OF ASPHALT AND STONE DUST TRAILS, A PAVED SKATE AREA, LANDSCAPING, LAWN AND OTHER OPEN NATURAL AREAS.

FOR THE 10 YEAR STORM, THE EXISTING CONDITION FOR THE SITE GENERATES AN OVERALL RATE OF FLOW OF 4.42 CFS. THE PROPOSED CONDITION RATE OF FLOW WILL BE 5.08 CFS. THIS RESULTS IN AN INCREASE OF 0.66 CFS.

STORMWATER ANALYSIS

EXISTING CONDITION:

	AREA S.F.	AREA AC.	C FACTOR	CA	INTENSITY 5 MIN TC IN/HR	RATE OF FLOW Q 10 YR. CFS
STONE DUST TRAILS	1,730	0.04	0.50	0.02		
GRASS, GARDEN BEDS, MULCH, NATURAL AREAS	85,352	1.96	0.30	0.59		
TOTAL	87,082	2.00	0.30	0.61	7.27	4.42

PROPOSED CONDITION:

PAVED TRAILS AND SKATE AREA	6,310	0.14	0.90	0.13		
STONE DUST TRAILS	2,690	0.06	0.50	0.03		
GRASS, GARDEN BEDS, MULCH, NATURAL AREAS	78,082	1.79	0.30	0.54		
TOTAL	87,082	2.00	0.35	0.70	7.27	5.08

INCREASE 0.66

ESTIMATED VOLUME PER ROUTINGS (USING POND-PACK-10):

2 YEAR VOLUME = 311* CF
10 YEAR VOLUME= 382* CF

*SEE POND PACK-10 VOLUME ROUTING ESTIMATIONS ON THIS SHEET FOR COMPUTATIONS

BIO-RETENTION VOLUME REQUIREMENTS:

USING A 20% VOID VOLUME REMOVAL RATE IN THE SOIL MEDIA OF THE BIO RETENTION

BIO-RETENTION SURFACE AREA= 958 SF
DEPTH OF BIO-RETENTION SOIL MEDIA= 2 FT
VOLUME REMOVAL VOID RATE= 0.20

TOTAL VOLUME OF SOIL MEDIA REQUIRED TO REMOVE THE DETENTION VOLUME REQUIRED:
ACTUAL VOLUME = (958 SF) X (2 FT) X (0.20) = 383** CF
REQUIRED VOLUME = 382 CF

**SEE BIO-RETENTION SIZING COMUPTATIONS THIS SHEET

SINCE THE VOLUME OF SOIL MEDIA PROVIDED IN THE BIO-RETENTION AREA IS GREATER THAN THE REQUIRED SWM VOLUME, STORM WATER MANAGEMENT REQUIEMENTS HAVE BEEN MET FOR THE 2-YR AND 10-YR STORM EVENTS

THIS STORMWATER RUNOFF LEAVES THE SITE IN AN UNCONCENTRATED, OVERLAND FLOW TO AN EXISTING DITCH THAT IS DESCRIBED IN GREATER DETAIL BELOW IN THE OUTFALL NARRATIVE.

BY THE ADDITION OF A BIO-RETENTION AREA TO INTERCEPT A MAJORITY OF THE IMPERVIOUS AREA STORM WATER DETENTION HAS BEEN ACHIEVED. THE VOLUME OF SOIL IS SUFFICIENT TO REMOVE THE REQUIRED VOLUME OF RUNOFF INCREASE FROM THE POST DEVELOPMENT BACK TO EXISTING RATES. SEE COMPUTATIONS THIS SHEET FOR SIZING AND VOLUME ROUTING ESTIMATES.

BMP NARRATIVE:

THE PROPOSED IMPROVEMENTS RESULT IN AN OVERALL IMPERVIOUSNESS FOR THE SITE OF 9% (7,655 S.F. / 87,082 S.F.). THIS IS BELOW THE CITY'S THRESHOLD OF 35% IMPERVIOUS BEFORE STORM WATER QUALITY AND ADDITIONAL POLLUTION REMOVAL (BMP) IS REQUIRED. HOWEVER, THROUGH THE EXTENSIVE LANDSCAPING AND THE BIO-RETENTION FACILITY USED FOR STORM WATER DETENTION THAT IS PROPOSED ALONG THE SOUTHERN BOUNDARY OF THE PARK, INFORMAL STORMWATER QUALITY MEDIATION WILL BE OBTAINED. IN ACCORDANCE WITH THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK FOR BMP, THE LANDSCAPE PLAN HAS BEEN DESIGNED TO TOLERATE URBAN STRESSES AND POLUTANTS, TAKING INTO CONSIDERATION SOIL MOISTURE AND TOPOGRAPHY FOR THIS AREA. NATIVE AND WATER TOLERANT PLANT SPECIES HAVE BEEN SELECTED THAT WILL PROVIDE FILTERING AND BIOLOGICAL NUTRIENT UPTAKE OF NON-CONCENTRATED RUN-OFF FROM THE SKATE, TRAIL AND OPEN PLAY AREAS. THE LANDSCAPED AREA WILL ACT AS A VEGIETIVE BUFFER BETWEEN THE SITE AREA DOWN STREAM PROPERTIES. ADDITIONALLY, THE ADJACENT DITCH WILL BE LANDSCAPED WITH NATIVE, WATER TOLERANT SPECIES TO PROVIDE ADDITIONAL BMP MEASURES SIMILAR TO A VEGETATED SWALE.

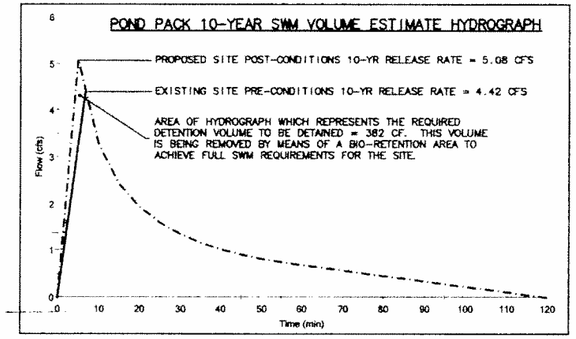
OUTFALL NARRATIVE:

THE STORMWATER RUNOFF FROM THE SITE DRAINS OVERLAND IN A SOUTHERLY DIRECTION, DIRECTLY INTO AN EXISTING, WELL ESTABLISHED, DITCH THAT IS LOCATED IMMEDIATELY SOUTH OF, AND PARALLEL TO, THE PARK'S SOUTHERN BOUNDARY. THE EXISTING DITCH IS LOCATED ON LAND OWNED BY THE NORTHERN VIRGINIA REGIONAL PARK AUTHORITY AND DOMINION POWER. BOTH PARTIES HAVE REVIEWED THE PROPOSED SITE PLAN AND HAVE NO OBJECTION TO THE PROPOSED IMPROVEMENTS. THE FLOW IS OVERLAND AND UNCONCENTRATED WITH THE EXCEPTION OF THE FLOW (0.3 CFS) FROM A PROPOSED SODDED DITCH IN THE WESTERN PORTION OF THE SITE.

THE OVERALL DRAINAGE AREA FOR THIS DITCH IS APPROXIMATELY 9.8 ACRES AS SHOWN ON THE DRAINAGE AREA MAP ON THIS SHEET. FOR THE PURPOSES OF THIS OUTFALL ANALYSIS, WE HAVE DETERMINED THE 10 YEAR RATE OF FLOW TO BE APPROXIMATELY 19.95 CF.. BASED ON RECENT FIELD RUN SURVEY DATA OF A TYPICAL DITCH CROSS-SECTION AND LONGITUDINAL SLOPE, WE HAVE DETERMINED THAT THE 10 YEAR WATER DEPTH IN THE DITCH IS APPROXIMATELY 2.2 FEET AND IS ADEQUATELY CONTAINED WITHIN THE BANKS OF THE DITCH. ADDITIONALLY, WE HAVE DETERMINED THAT THE 2 YEAR VELOCITY IS APPROXIMATELY 1.6 FPS, WELL BELOW MINIMUM PERMISSIBLE VELOCITY OF 2.5 FPS, AND THEREFORE, NON-EROSIVE TO THE EXISTING DITCH. THE DITCH WILL BE FURTHER STABILIZED WITH WATER TOLERANT PLANT MATERIAL TO ENHANCE EROSION PREVENTION. A TYPICAL DITCH CROSS SECTION HAS BEEN PROVIDED BELOW.

THE DITCH CONVEYS THE FLOW IN A WESTERLY DIRECTION TO AN EXISTING 24 INCH STORM SEWER THAT CROSSES WEST BROAD STREET. THE FLOW ENTERS THE EXISTING STORM SEWER THROUGH AN EXISTING CONCRETE FLARED-END SECTION. WE HAVE DETERMINED THAT THE HEADWATER DEPTH AT THE ENTRANCE OF THIS STORM SEWER IS 2.7 FEET, WITH A HEADWATER ELEVATION OF APPROXIMATELY 339.1, WHICH MATCHES EXISTING CONDITIONS. BASED ON FIELD RUN TOPOGRAPHY, THE HEADWATER WILL BE CONTAINED ON THE PARK LAND AND NOT SPILL OVER ONTO THE EXISTING SIDEWALKS OR INTO THE ROAD (APPROXIMATELY 1.7 FEET BELOW SIDEWALK ELEVATION). BASED ON RECENT AS-BUILT FIELD SURVEY INFORMATION, THE SLOPE FOR THE EXISTING 24 INCH STORM SEWER IS 0.73%. FULL FLOW CAPACITY FOR THIS PIPE IS 19.4 CFS; CONSEQUENTLY, THIS PIPE WILL FLOW UNDER SLIGHT HEAD PRESSURE TO CONVEY THE 19.9 CFS, BUT NOT MORE THAN THAT NOTED ABOVE FOR THE 10 YEAR DESIGN STORM AND APPROXIMATELY THE SAME AS EXISTING.

BASED ON THESE STATED CONDITIONS, IT IS OUR OPINION THAT THE EXISTING OUTFALL AS DESCRIBED ABOVE IS ADEQUATE FOR THE SUBJECT SITE IMPROVEMENTS.



POND PACK-10 SWM VOLUME ROUTING ESTIMATES

Type.... Target Outflow Volume Estimates

DETENTION STORAGE ESTIMATES — Target Peak Outflow Rate

Return Events	Peak In (cfs)	Target (cfs)	Linear (cu.ft)
2	3.815	3.270	311
10	5.089	4.420	382

CALCULATION TIME RANGES

Return Events	Linear From (min)	To (min)
2	.00	7.01
10	.00	6.85

INFLOW HYDROGRAPH...
HYG file =
HYG ID = POST-10YR
HYG Tag =

Peak Discharge =	5.09 cfs
Time to Peak =	5.00 min
HYG Volume =	7472 cu.ft

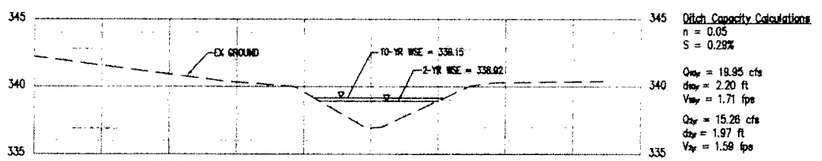
HYDROGRAPH ORDINATES (cfs)
Output Time increment = 5.00 min
Time on left represents time for first value in each row.

Time min				
.00	5.09	3.28	2.42	1.94
25.00	1.60	1.36	1.18	1.03	.92
50.00	.83	.76	.69	.64	.58
75.00	.52	.46	.41	.35	.29
100.00	.23	.18	.12	.06	.00

Bio-Retention Computations

Swale No.	(A) Drainage Area sf	Ac.	Soil Type	Forest Cover sf	Ac.	(%F) Percent Forest %	(Rv) Runoff Coef.	Manged Turf Cover sf	Ac.	(%T) Percent Turf %	(Rv) Runoff Coef.	Impervious Cover sf	Ac.	(%i) Percent Impervious %	(Rv) Runoff Coef.	(Rv) Weighted Runoff Coef.
[redacted]		0.695			0.190	27%	0.05	[redacted]	0.397	57%	0.25	[redacted]	0.110	16%	0.95	0.31

Swale No	(Tv) Treatment Volume cf	Design Level	Depth of Soil Media ft	Depth of Gravel Layer ft	Depth of Surface Storage ft	Equiv. Storage depth ft	(SA) Min Surface Area sf	Length Bio-Area ft	Calculated Width Bio-Area ft	Actual Width Bio-Area ft	Actual Surface Area Provided sf
[redacted]	774	[redacted]				1.02	760	[redacted]	4.3	6.0	958



2 TYPICAL DITCH SECTION A-A

SCALE: 1" = 5'

0' 50' 100' 200'

NO.	DESCRIPTION	DATE	REVS'D	REV'W'D	APR'V'D	DATE
	REVISION					

EDWARD G. VENDITTI — Lic. No. 16395 — 07/07/09 — PROFESSIONAL ENGINEER

CITY PLAN # 20090407

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
SWM, BMP & OUTFALL NARRATIVES

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
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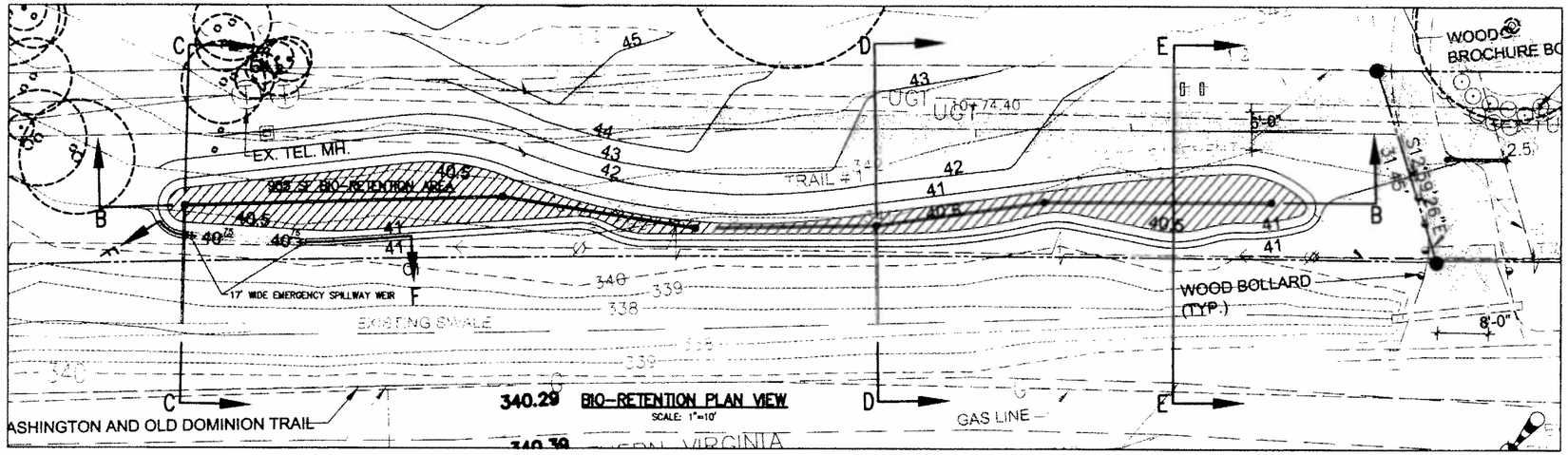
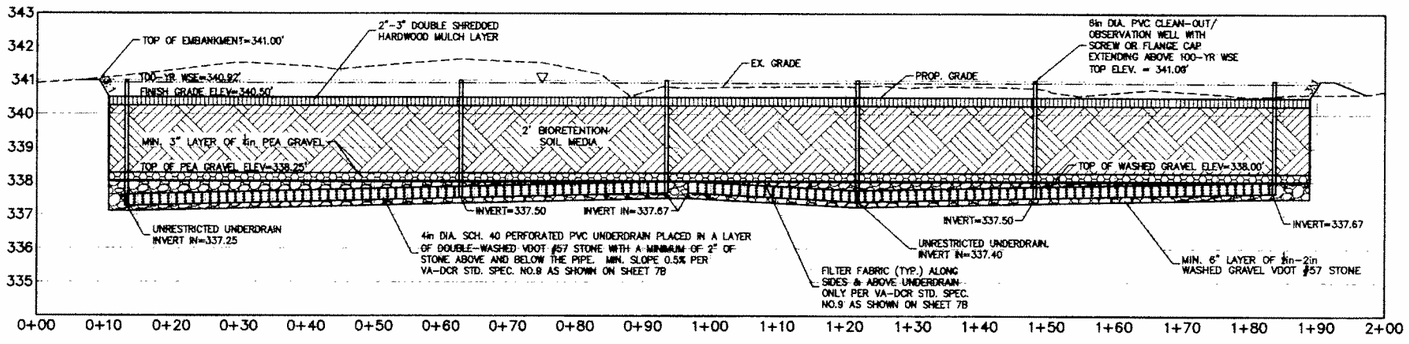
DESIGN PHR+A	SURVEY PHR+A
DRAWN MBR	DATE JUNE 17, 2009
CHECKED EGV	SCALE 1" = 100'
SHEET C407SWM-DD 7 OF 21	FILE NO. 15907-1-0



340.29 **BIO-RETENTION PLAN VIEW**
SCALE: 1"=10'



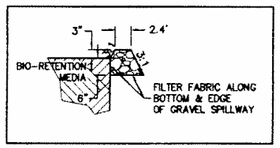
BIO-RETENTION SECTION B-B
HOR. SCALE: 1"=10'
VER. SCALE:1"=2'

100-year Weir Computation

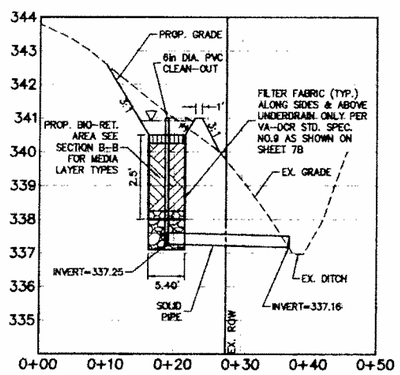
Q weir Equation = $CLH^{3/2}$

C_{weir} =	3.0
L =	17.00 ft
Crest Elev.=	340.75 ft
A =	0.70 Ac
C_{Runoff} =	0.40
Cf_{Storm} =	1.25
Intensity =	9.84 in/hr
100-yr Q =	3.44 cfs

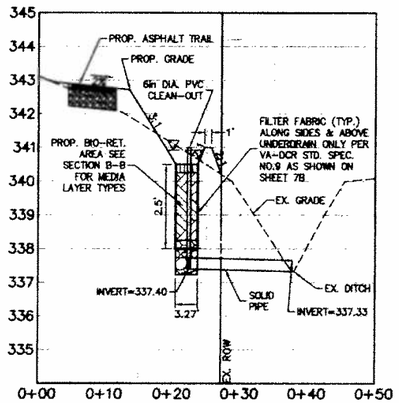
W.S. ELEV (ft)	H (ft)	$H^{3/2}$	CL	Qw (cfs)
340.92	0.166	0.068	51	3.44



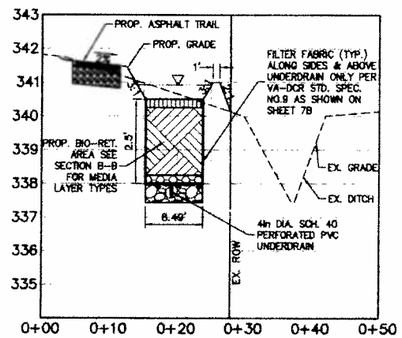
EMERGENCY SPILLWAY CROSS-SECTION
HOR. SCALE: 1"=10'
VER. SCALE:1"=2'



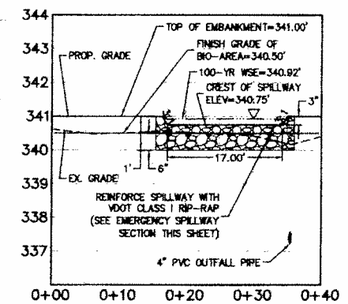
BIO-RETENTION SECTION C-C
HOR. SCALE: 1"=10'
VER. SCALE:1"=2'



BIO-RETENTION SECTION D-D
HOR. SCALE: 1"=10'
VER. SCALE:1"=2'



BIO-RETENTION SECTION E-E
HOR. SCALE: 1"=10'
VER. SCALE:1"=2'



BIO-RETENTION SECTION F-F
HOR. SCALE: 1"=10'
VER. SCALE:1"=2'

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
	REVISION					

EDWARD C. VENDITTI Lic. No. 16395 01/07/11 PROFESSIONAL ENGINEER

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
BIO-RETENTION SECTIONS

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CITY PLAN # 20090407

DESIGN: PHR+A	SURVEY: PHR+A
DRAWN: MBR	DATE: NOVEMBER 21, 2011
CHECKED: EGV	SCALE: 1" = 100'
SHEET C407-A-SWM 7A OF 21	FILE NO. 15907-1-0

VIRGINIA DCR SPECIFICATION NO. 9
BIORETENTION
VERSION 1.9
MARCH 1, 2011

SECTION 8: CONSTRUCTION

8.1. Construction Sequence

Construction Stage E&S Controls. Micro-bioretention and small-scale bioretention areas should be fully protected by silt fence or construction fencing, particularly if they will rely on infiltration (i.e., have no underdrains). Ideally, bioretention should remain outside the limit of disturbance during construction to prevent soil compaction by heavy equipment. Bioretention basin locations may be used as small sediment traps or basins during construction. However, these must be accompanied by notes and graphic details on the E&S plan specifying that (1) the maximum excavation depth at the construction stage must be at least 1 foot above the post-construction installation, and (2) the facility must contain an underdrain. The plan must also show the proper procedures for converting the temporary sediment control practice to a permanent bioretention facility, including dewatering, cleanout and stabilization.

8.2 Bioretention Installation

The following is a typical construction sequence to properly install a bioretention basin (also see Figure 9.16). The construction sequence for micro-bioretention is more simplified. These steps may be modified to reflect different bioretension applications or expected site conditions:

Step 1. Construction of the bioretention area may only begin after the entire contributing drainage area has been stabilized with vegetation. It may be necessary to block certain curb or other inlets while the bioretention area is being constructed. The proposed site should be checked for existing utilities prior to any excavation.

Step 2. The designer and the installer should have a preconstruction meeting, checking the boundaries of the contributing drainage area and the actual inlet elevations to ensure they conform to original design. Since other contractors may be responsible for constructing portions of the site, it is quite common to find subtle differences in site grading, drainage and paving elevations that can produce hydraulically important differences for the proposed bioretention area. The designer should clearly communicate, in writing, any project changes determined during the preconstruction meeting to the installer and the plan review/inspection authority.

Step 3. Temporary E&S controls are needed during construction of the bioretention area to divert stormwater away from the bioretention area until it is completed. Special protection measures such as erosion control fabrics may be needed to protect vulnerable side slopes from erosion during the construction process.

Step 4. Any pre-treatment cells should be excavated first and then sealed to trap sediments.

Step 5. Excavators or backhoes should work from the sides to excavate the bioretention area to its appropriate design depth and dimensions. Excavating equipment should have scoops with adequate reach so they do not have to sit inside the footprint of the bioretention area. Contractors should use a cell construction approach in larger bioretention basins, whereby the basin is split into 500 to 1,000 sq. ft. temporary cells with a 10-15 foot earth bridge in between, so that cells can be excavated from the side.

Step 6. It may be necessary to rip the bottom soils to a depth of 6 to 12 inches to promote greater infiltration.

Step 7. Place geotextile fabric on the sides of the bioretention area with a 6-inch overlap on the sides. If a stone storage layer will be used, place the appropriate depth of #57 stone on the bottom, install the perforated underdrain pipe, pack #57 stone to 3 inches above the underdrain pipe, and add approximately 3 inches of choker stone/pea gravel as a filter between the underdrain and the soil media layer. If no stone storage layer is used, start with 6 inches of #57 stone on the bottom, and proceed with the layering as described above.

Step 8. Deliver the soil media from an approved vendor, and store it on an adjacent impervious area or plastic sheeting. Apply the media in 12-inch lifts until the desired top elevation of the bioretention area is achieved. Wait a few days to check for settlement, and add additional media, as needed, to achieve the design elevation.

Step 9. Prepare planting holes for any trees and shrubs, install the vegetation, and water accordingly. Install any temporary irrigation.

Step 10. Place the surface cover in both cells (mulch, river stone or turf), depending on the design. If coir or jute matting will be used in lieu of mulch, the matting will need to be installed prior to planting (Step 9), and holes or slits will have to be cut in the matting to install the plants.

Step 11. Install the plant materials as shown in the landscaping plan, and water them during weeks of no rain for the first two months.

Step 12. Conduct the final construction inspection (see Section 9.2). Then log the GPS coordinates for each bioretention facility and submit them for entry into the local maintenance tracking database.

8.3.Construction Inspection

An example construction phase inspection checklist for Bioretention areas can be accessed at the CWP website at:

http://www.cwp.org/Resource Library/Controlling Runoff and Discharges/sm_htm
(scroll to Tools: Plan Review, BMP Construction, and Maintenance Checklists)

SECTION 9: MAINTENANCE

9.1. Maintenance Agreements

Section 4 VAC 50-60-124 of the regulations specifies the circumstances under which a maintenance agreement to must be executed between the owner and the local program. This section sets forth inspection requirements, compliance procedures if maintenance is neglected, notification of the local program upon transfer of ownership, and right-of-entry for local program personnel.

For bioretention, maintenance agreements must contain recommended maintenance tasks and a copy of an annual inspection checklist. When micro-scale bioretention practices are applied on private residential lots, homeowners will need to be educated regarding their routine maintenance needs. A deed restriction, drainage easement or other mechanism enforceable by the qualifying local program must be in place to help ensure that rain gardens and bioretention filters are maintained and not converted or disturbed, as well as to pass the knowledge along to any subsequent owners. The mechanism should, if possible, grant authority for local agencies to access the property for inspection or corrective action.

9.2. First Year Maintenance Operations

Successful establishment of bioretention areas requires that the following tasks be undertaken in the first year following installation:

Initial Inspections. For the first 6 months following construction, the site should be inspected at least twice after storm events that exceed 1/2 inch of rainfall.

Spot Reseeding. Inspectors should look for bare or eroding areas in the contributing drainage area or around the bioretention area, and make sure they are immediately stabilized with grass cover.

Fertilization. One-time, spot fertilization may be needed for initial plantings.

Watering. Watering is needed once a week during the first 2 months, and then as needed during first growing season (April-October), depending on rainfall.

Remove and replace dead plants. Since up to 10% of the plant stock may die off in the first year, construction contracts should include a care and replacement warranty to ensure that vegetation is properly established and survives during the first growing season following construction. The typical thresholds below which replacement is required are 85% survival of plant material and 100% survival of trees.

9.3. Maintenance Inspections

It is highly recommended that a spring maintenance inspection and cleanup be conducted at each bioretention area. The following is a list of some of the key maintenance problems to look for:

- Check to see if 75% to 90% cover (mulch plus vegetative cover) has been achieved in the bed, and measure the depth of the remaining mulch.
- Check for sediment buildup at curb cuts, gravel diaphragms or pavement edges that prevents flow from getting into the bed, and check for other signs of bypassing.
- Check for any winter- or salt-killed vegetation, and replace it with hardier species.
- Note presence of accumulated sand, sediment and trash in the pre-treatment cell or filter beds, and remove it.
- Inspect bioretention side slopes and grass filter strips for evidence of any rill or gully erosion, and repair it.
- Check the bioretention bed for evidence of mulch flotation, excessive ponding, dead plants or concentrated flows, and take appropriate remedial action.
- Check inflow points for clogging, and remove any sediment.
- Look for any bare soil or sediment sources in the contributing drainage area, and stabilize them immediately.
- Check for clogged or slow-draining soil media, a crust formed on the top layer, inappropriate soil media, or other causes of insufficient filtering time, and restore proper filtration characteristics.

Example maintenance inspection checklists for Bioretention areas can be accessed in Appendix C of Chapter 9 of the *Virginia Stormwater Management Handbook* (2010) or at the Center for Watershed Protection website at:

http://www.cwp.org/Resource Library/Controlling Runoff and Discharges/sm_htm
(scroll to Tools: Plan Review, BMP Construction, and Maintenance Checklists)

9.4. Routine and Non-Routine Maintenance Tasks

Maintenance of bioretention areas should be integrated into routine landscape maintenance tasks. If landscaping contractors will be expected to perform maintenance, their contracts should contain specifics on unique bioretention landscaping needs, such as maintaining elevation differences needed for ponding, proper mulching, sediment and trash removal, and limited use of fertilizers and pesticides. A customized maintenance schedule must be prepared for each bioretention facility, since the maintenance tasks will differ depending on the scale of bioretention, the landscaping template chosen, and the type of surface cover. A generalized summary of common maintenance tasks and their frequency is provided in Table 9.7.

The most common non-routine maintenance problem involves standing water. If water remains on the surface for more than 48 hours after a storm, adjustments to the grading may be needed or underdrain repairs may be needed. The surface of the filter bed should also be checked for accumulated sediment or a fine crust that builds up after the first several storm events. There are several methods that can be used to rehabilitate the filter (try the easiest things first, as listed below):

- Open the underdrain observation well or cleanout and pour in water to verify that the underdrains are functioning and not clogged or otherwise in need of repair. The purpose of this check is to see if there is standing water all the way down through the soil. If there is standing water on top, but not in the underdrain, then there is a clogged soil layer. If the underdrain and stand pipe indicates standing water, then the underdrain must be clogged and will need to be soaked.
- Remove accumulated sediment and till 2 to 3 inches of sand into the upper 8 to 12 inches of soil.
- Install sand wicks from 3 inches below the surface to the underdrain layer. This reduces the average concentration of fines in the media bed and promotes quicker drawdown times. Sand wicks can be installed by excavating or augering (using a tree auger or similar tool) down to the gravel storage zone to create vertical columns which are then filled with a clean open-graded coarse sand material (ASTM C-33 concrete sand or similar approved sand mix for bioretention media). A sufficient number of wick drains of sufficient dimension should be installed to meet the design dewatering time for the facility.
- Remove and replace some or all of the soil media.

Table 9.7. Suggested Annual Maintenance Activities for Bioretention

Maintenance Activity	Frequency
• Mowing of grass filter strips and bioretention turf cover	At least 4 times a year
• Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season
• Add reinforcement planting to maintain desired the vegetation density • Remove invasive plants using recommended control methods • Stabilize the contributing drainage area to prevent erosion	As needed
• Spring inspection and cleanup • Supplement mulch to maintain a 3 inch layer • Prune trees and shrubs	Annually
• Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years
• Replace the mulch layer	Every 3 years

BIO-RETENTION FILTER AND BASIN SOIL MEDIA

A mix of natural, washed sand meeting ASTM C-33, native soil screened to 6mm (min), and organic compost. Components shall be blended in a pug mill (or approved equal) to create a homogenous material suitable for bio-retention filter, basin, and other bio-remediation facilities. The mix shall be free of sticks, stones, glass, or other deleterious materials specially weed seeds..

Components by volume shall be as follows:
Sand: 70% - 75%
Top Soil: 15% - 20%
Compost: 5% - 10%

Texture Class: Loamy Sand , Sandy loam, or Loam according to USDA textural classifications

Typical Analysis (final product):
Sand: 85% (80% min – 92% max)
Silt: 10% (4% min – 15% max)
Clay: 5% (3% min – 9% max)

Organic Matter: 3.0% (2.5% min – 5.0% max)
pH: 6.5 (6.0 min – 7.0 max)
CEC: 6.5 meq/100g (5.0 min – 8.0 max)

Calcium (Ca): 900 ppm (800 min – 1200 max)
Magnesium (Mg): 100 ppm (75 min – 150 max)
Potassium (K): 150 ppm (125 min – 225 max)
Phosphorous (P): 50 ppm (40 min – 125 max)
Soluble Salts: <0.60 me/cm

SEE BIO-RETENTION SOIL MIX THIS SHEET FOR PREFERED SOIL MEDIA TO BE USED

DUE TO SITE CONSTRAINTS AND THE USE OF TWO OUTFALLS: 4" UNDERDRAINS ARE USED AND WITH A MINIMUM SLOPE OF 0.50%

Table 9.6. Bioretention Material Specifications

Filter Media Composition	Filter Media to contain: • 85%-88% sand • 8%-12% soil fines • 3%-5% organic matter in the form of leaf compost	The volume of filter media based on 110% of the plan volume, to account for settling or compaction.
Filter Media Testing	P-Index range = 10-30, *OR* Between 7 and 21 mg/kg of P in the soil media CECs greater than 10	The media must be procured from approved filter media vendors.
Mulch Layer	Use aged, shredded hardwood bark mulch	Lay a 2 to 3 inch layer on the surface of the filter bed.
Alternative Surface Cover	Use river stone or pea gravel, coir and jute matting, or turf cover.	Lay a 2 to 3 inch layer of to suppress weed growth.
Top Soil For Turf Cover	Loamy sand or sandy loam texture, with less than 5% clay content, pH corrected to between 6 and 7, and an organic matter content of at least 2%.	3 inch surface depth.
Geotextile/Liner	Use a non-woven geotextile fabric with a flow rate of > 110 gal./min./sq. ft. (e.g., Geotex 351 or equivalent)	Apply only to the sides and above the underdrain. For hotspots and certain karst sites only, use an appropriate liner on bottom.
Choking Layer	Lay a 2 to 4 inch layer of sand over a 2 inch layer of choker stone (typically #8 or #89 washed gravel), which is laid over the underdrain stone.	
Stone Jacket for Underdrain and/or Storage Layer	1 inch stone should be double-washed and clean and free of all fines (e.g., VDOT #57 stone).	12 inches for the underdrain; 12 to 18 inches for the stone storage layer, if needed
Underdrains, Cleanouts, and Observation Wells	Use 6 inch rigid schedule 40 PVC pipe (or equivalent corrugated HDPE for micro-bioretention), with 3/8-inch perforations at 6 inches on center; position each underdrain on a 1% or 2% slope located not more than 20 feet from the next pipe.	Lay the perforated pipe under the length of the bioretention cell, and install non-perforated pipe as needed to connect with the storm drain system. Install T's and Y's as needed, depending on the underdrain configuration. Extend cleanout pipes to the surface with vented caps at the Ts and Ys.
Plant Materials	Plant one tree per 250 square feet (15 feet on-center, minimum 1 inch caliper). Shrubs a minimum of 30 inches high planted a minimum of 10 feet on-center. Plant ground cover plugs at 12 to 18 inches on-center; Plant container-grown plants at 18 to 24 inches on-center, depending on the initial plant size and how large it will grow.	Establish plant materials as specified in the landscaping plan and the recommended plant list. In general, plant spacing must be sufficient to ensure the plant material achieves 80% cover in the proposed planting areas within a 3-year period. If seed mixes are used, they should be from a qualified supplier, should be appropriate for stormwater basin applications, and should consist of native species (unless the seeding is to establish maintained turf).

NO.	DESCRIPTION	DATE	REVS'D	REW'D	APRV'D	DATE
	REVISION					

EDWARD G. VENDITTI Lic. No. 16395 PROFESSIONAL ENGINEER

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
BIO-RETENTION SPECIFICATIONS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
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CITY PLAN # 20090407

DESIGN PHR+A	SURVEY PHR+A
DRAWN MBR	DATE NOVEMBER 21, 2011
CHECKED EGV	SCALE 1" = 100'
SHEET C407-B-SWM 7B OF 21	FILE NO. 15907-1-0

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
THIS SITE PLAN CONSISTS OF SITE IMPROVEMENTS THAT INCLUDES THE CONSTRUCTION OF TRAILS AND SKATE AREA. THE IMPROVEMENTS PROPOSED HEREWITH WILL REQUIRE THE DISTURBANCE OF APPROXIMATELY 0.6 ACRES, WITHIN THE WEST END PARK.

THE OVERALL INTENT OF THIS PLAN IS THAT SEDIMENT AND EROSION BE CONTROLLED AT ALL TIMES DURING CONSTRUCTION, TO AT LEAST CURRENT STANDARDS OF THE VIRGINIA SEDIMENT AND EROSION CONTROL HANDBOOK AND THE CITY OF FALLS CHURCH. IT IS EXPECTED THAT, SUBJECT TO THE INSPECTOR'S APPROVAL, PROPOSED CONTROL MEASURES WILL NEED TO BE MOVED, MODIFIED, ADDED TO, AND/OR ELIMINATED DURING THE CONSTRUCTION PROCESS, AS NEEDED TO MAINTAIN THIS OVERALL INTENT.

EXISTING SITE CONDITIONS:
THIS SITE IS PRESENTLY VACANT, CONSISTING OF SCATTERED TREES AND NATIVE VEGETATION ON GENTLY ROLLING TERRAIN. AN OPEN LAWN AREA MAKES UP THE EAST PORTION OF THE SITE. THE SITE DRAINS TO AN OPEN DITCH ALONG THE SOUTHERN BOUNDARY OF THE SITE.

ADJACENT PROPERTY:
THE SITE IS BOUND TO THE EAST BY THE EXISTING PORTION OF THE WEST END PARK, AND BEYOND THAT, EXISTING SINGLE FAMILY DETACHED RESIDENCES LOCATED ON GROVE AVENUE. TO THE SOUTH, THE PARK IS BOUND BY THE W&OD TRAIL OWNED BY THE NORTHERN VIRGINIA REGIONAL PARK AUTHORITY. COMMERCIAL ESTABLISHMENTS, CONSISTING OF A CAR WASH AND PARKING LOT, ARE ADJACENT TO THE PARK'S NORTHWEST BOUNDARY. AT THE SOUTHWEST CORNER OF THE SITE, THE PARK HAS APPROXIMATELY 30 FEET OF FRONTAGE ONTO WEST BROAD STREET (ROUTE 7).

CRITICAL AREAS:
THERE ARE NO CRITICAL AREAS WITHIN THE LIMITS OF THIS SITE PLAN.

SOILS:
BASED ON GEOTECHNICAL INVESTIGATIONS, THE UPPER SOILS FOUND ON THE SITE ARE LEAN CLAYS WITH MODERATE SLOPE STABILITY AND MODERATE ERODIABILITY.

EROSION & SEDIMENT CONTROL MEASURES:
EROSION ON THIS SITE WILL BE CONTROLLED BY RAPID STABILIZATION OF DISTURBED AREAS. ALL CUT AND FILL SLOPES SHALL BE NO STEEPER THAN 2:1. DETAILS FOR ALL EROSION AND SEDIMENT CONTROL DETAIL MEASURES ARE SHOWN ON THIS SHEET.

STRUCTURAL PRACTICES:
SILTATION CONTROL
1. TREE PROTECTION - 3.38
   A FENCE BARRIER IS TO BE PLACED IN ACCORDANCE WITH THE PLAN TO PROTECT THE TREES AND OTHER VEGETATION FROM CONSTRUCTION EQUIPMENT AND SOIL COMPACTION. SUPER SILT FENCE MAY BE USED FOR TREE PROTECTION.
2. SUPER SILT FENCE BARRIER
   SUPER SILT FENCE SEDIMENT BARRIERS WILL BE INSTALLED DOWNSLOPE OF AREAS WITH GRADING TO FILTER SEDIMENT-LADEN RUNOFF FROM SHEET FLOW.
3. TEMPORARY CONSTRUCTION ENTRANCE- 3.02
   A TEMPORARY CONSTRUCTION ENTRANCE WITH A WASH RACK SHALL BE INSTALLED AT THE END OF THE PARK. DURING MUDDY CONDITIONS, DRIVERS OF CONSTRUCTION VEHICLES SHALL BE REQUIRED TO WASH THEIR WHEELS BEFORE LEAVING THE SITE.

VEGETATIVE PRACTICES:
1. TEMPORARY SEEDING- 3.31
   ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED.

MANAGEMENT STRATEGIES:
SEDIMENT CONTROL PROGRAM - PHASE I
STEP 1:
1. OBTAIN CONSTRUCTION PERMIT AND ATTEND PRE-CONSTRUCTION MEETING WITH THE INSPECTOR PRIOR TO STARTING ANY LAND DISTURBING ACTIVITIES.
2. INSTALL A STABILIZED CONSTRUCTION ENTRANCE AND ESTABLISH A PROTECTED STAGING, EQUIPMENT, AND STOCKPILE AREAS.
3. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
4. INSTALL PERIPHERAL MECHANICAL CONTROLS (SUPER SILT FENCE, TREE PROTECTION, AND CONSTRUCTION FENCE.)
5. OBTAIN INSPECTOR'S APPROVAL AND SIGNATURE ON PERMIT FOR SATISFACTORY COMPLETION OF STEP 1 WORK PRIOR TO PROCEEDING WITH REMAINING SITE PREPARATION.

STEP 2:
1. FINALIZE INSTALLATION OF CONSTRUCTION ENTRANCE WITH WASH RACK AS SHOWN ON PLAN. MUD AND DEBRIS SHALL BE WASHED FROM ALL CONSTRUCTION EQUIPMENT AND VEHICLES BEFORE LEAVING THE SITE. THE SOURCE OF WATER SUPPLY SHALL BE A NEARLY EXISTING FIRE HYDRANT OR A WATER TRUCK. THE CONTRACTOR IS TO MAKE SURE THAT RUNOFF FROM THE CONSTRUCTION ENTRANCE IS DIRECTED TOWARDS THE EROSION AND SEDIMENT CONTROLS WITHIN THE LIMITS OF DISTURBANCE.
2. FINALIZE INSTALLATION OF PERIMETER CONTROLS.
3. THE CONTRACTOR SHALL KEEP THE CONTROLS AS LONG AS POSSIBLE DURING CONSTRUCTION UNTIL IT CONFLICTS WITH PERMANENT PROPOSED CONDITIONS, AT THAT TIME IT SHALL BE REMOVED.

SEDIMENT CONTROL PROGRAM - PHASE 2
TASK 1:
1. THE CITY OF FALLS CHURCH INSPECTOR SHALL INSPECT ALL PHASE I CONTROLS PRIOR TO THE CONTRACTOR IMPLEMENTING CONSTRUCTION.
2. START STORM SEWER INSTALLATION AND CONSTRUCTION
3. AS SOON AS THE STORM SEWER CONSTRUCTION IS FINALIZED AND ACTIVE, ADJUST THE SILT FENCE AS SHOWN ON THE PHASE II CONTROLS PLAN INSET.

TASK 2:
1. START THE GRADING, TRAIL AND SKATE AREA CONSTRUCTION AND MAKE SURE THAT THE ADJACENT TREES AND LANDSCAPING ARE PROTECTED FROM SEDIMENT.
2. AFTER CONSTRUCTION OPERATIONS HAVE ENDED AND ALL DISTURBED AREAS HAVE BEEN STABILIZED, MECHANICAL CONTROLS MAY BE REMOVED AND THE GROUND PERMANENTLY STABILIZED BY TEMPORARY SEEDING SUBJECT TO THE APPROVAL OF THE CITY OF FALLS CHURCH SITE INSPECTOR (WITHIN 30 DAYS AFTER FINAL STABILIZATION)

MAINTENANCE PROGRAM:
1. THE SITE SUPERINTENDENT SHALL MAKE VISUAL INSPECTION OF ALL CONTROLS AND NEWLY STABILIZED AREAS ON A DAILY BASIS, ESPECIALLY AFTER A HEAVY RAINFALL EVENT TO INSURE THAT ALL CONTROLS SHALL BE REPAIRED PRIOR TO THE END OF THE WORKDAY INCLUDING RE-SEEDING AND MULCHING, OR RE-SODDING IF NECESSARY.
2. SEDIMENT REMOVAL SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS. SEDIMENT SHALL BE DISPOSED OF BY SPREADING ON THE SITE OR HAULING AWAY IF NOT SUITABLE FOR FILL.

PERMANENT STABILIZATION:
1. ALL AREAS DISTURBED BY CONSTRUCTION OPERATIONS AND NEWLY GRADED AREAS SHALL BE VEGETATIVE AND SODDED ON 2:1 SLOPE AND SEEDED ON ALL OTHER AREAS. MULCH (STRAW OR FIBER) SHALL BE USED ON RELATIVELY FLAT AREAS TO ALLOW SEED TO GERMINATE PROPERTY. IF SEEDING AND SODDING CANNOT BE ACCOMPLISHED DURING SCHEDULED TIME, PROTECT DISTURBED AREAS WITH MULCH OR JUTE MESH. RECOMMENDED SEEDING AND SODDING TIME SHALL BE IN SPRING BETWEEN FEBRUARY 1 AND APRIL 30 OR IN THE FALL BETWEEN SEPTEMBER 1 AND OCTOBER 15.
2. NO SEDIMENT CONTROL DEVICES SHALL BE REMOVED WITHOUT APPROVAL OF THE CITY OF FALLS CHURCH SITE INSPECTOR.
3. SILT FENCES SHALL BE KEPT AS CLOSE AS POSSIBLE TO THE LIMITS OF CLEARING AND GRADING. SILT FENCES WILL BE CLEARED WHEN THE SILT REACHES HALF THE HEIGHT OF THE FENCE.
4. THE SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED.

LAND CONSERVATION NOTES:
1. NO DISTURBED AREA WHICH IS NOT ACTIVELY BEING WORKED SHALL REMAIN DENUDED FOR MORE THAN 7 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR.
2. ALL E&S CONTROL MEASURES APPROVED WITH THE PHASE I E&S CONTROL PLAN SHALL BE PLACED AS THE FIRST STEP IN GRADING.
3. THE STORM SEWER LINE SHALL BE SEEDED AND MULCHED WITHIN 14 DAYS AFTER BACKFILL.
4. ANY AND ALL TEMPORARY EARTH BERMS, DIVERSIONS AND SEDIMENT CONTROL DAMS SHALL BE SEEDED AND MULCHED FOR TEMPORARY VEGETATIVE COVER IMMEDIATELY (AS SOON AS POSSIBLE BUT NO LATER THAN 48 HR) AFTER COMPLETION OF GRADING. STRAW OR HAY MULCH IS REQUIRED. ALL SOIL STOCKPILES SHALL BE SEEDED AND MULCHED WITHIN 14 DAYS AFTER GRADING.
5. DURING CONSTRUCTION, THE STORM SEWER INLET SHALL BE PROTECTED BY A SEDIMENT TRAP, MAINTAINED AND MODIFIED DURING CONSTRUCTION PROGRESS AS REQUIREDDURING CONSTRUCTION, THE EXISTING CULVERT SHALL BE PROTECTED BY CULVERT INLET PROTECTION, MAINTAINED AND MODIFIED DURING CONSTRUCTION PROGRESS AS REQUIRED,
6. ANY DISTURBED AREA NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 1, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED IMMEDIATELY WITH HAY OR STRAW MULCH AT THE RATE OF 2 TONS/ACRE AND OVER SEEDED BY APRIL 15.
7. AT THE COMPLETION OF ANY PROJECT CONSTRUCTION AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED.

CONTROLLED FILL NOTES:
1. PRIOR TO THE PLACEMENT OF ANY FILL, ALL SURFACE DRAINAGE SHOULD BE ROUTED AWAY FROM THE CONSTRUCTION AREAS.
2. ALL FILL MATERIALS AND THE EMBANKMENT SUBGRADE SHOULD BE APPROVED BY THE SOILS ENGINEER PRIOR TO THE PLACEMENT OF ANY MATERIALS.
3. FILL MATERIALS SHOULD BE PLACED IN NO GREATER THAN 8 IN (UNCOMPACTED) LIFTS AND COMPACTED TO AT LEAST 95% MAXIMUM AVAILABLE DRY DENSITY AS DETERMINED IN ACCORDANCE WITH SPECIFICATIONS SET FORTH IN ASTM D698. THE MOISTURE CONTENT OF THE SOILS TO BE USED AS FILL SHOULD BE WITHIN 3 PERCENT, PLUS OR MINUS, OF THE OPTIMUM MOISTURE CONTENT.

DUST EMISSION CONTROL:
THE CONTRACTOR SHALL TAKE SPECIAL CARE TO CONTROL DUST DURING THE PROPOSED CONSTRUCTION ACTIVITIES. DUST SHALL BE ALLAYED BY MEANS OF VEGETATIVE COVER (SEED AND MULCH IN ACCORDANCE WITH THE REQUIREMENTS PRESENTED ON THIS SHEET). ALL DISTURBED AREAS SHALL BE SPRINKLED WITH WATER AS NEEDED DURING DRY WEATHER PERIODS UNTIL A STABLE GROUND SURFACE IS ESTABLISHED. DUST CONTROL SHALL BE IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (LATEST EDITION).

GENERAL EROSION & SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

SODDING SPECIFICATIONS

METHODS AND MATERIALS:
1. CLASS OF TURF GRASS SOD SHALL BE VIRGINIA STATE CERTIFIED, OR STATE APPROVED SOD.
2. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF ONE INCH, PLUS OR MINUS ONE INCH, AT TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH.
3. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY FROM A FIRM GRASP ON THE UPPER 10% OF THE SECTION.
4. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIER'S WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5%. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
5. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
6. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE INSPECTED FOR APPROVAL PRIOR TO ITS INSTALLATION.

SITE PREPARATION:
FERTILIZER AND LIME APPLICATION RATES SHALL BE DETERMINED BY SOILS TESTS. UNDER UNUSUAL CIRCUMSTANCES WHERE THERE IS INSUFFICIENT TIME FOR A COMPLETE SOIL TEST, FERTILIZER AND LIME MATERIALS MAY BE APPLIED IN AMOUNTS SHOWN UNDER 2 AND 3 BELOW.

1. PRIOR TO SODDING, THE SURFACE SHALL BE CLEARED OF ALL VEGETATION, TRASH, DEBRIS, AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATION.
2. WHERE THE SOIL IS ACID OR COMPOSED OF HEAVY CLAYS, GROUND AGRICULTURAL LIMESTONE SHALL BE SPREAD AT THE RATE OF 100 POUNDS PER 1,000 SQUARE FEET. IN ALL SOILS THE REQUIRED LIME AND 30 POUNDS OF 5-10-5 OR EQUIVALENT FERTILIZER PER 2,000 SQUARE FEET SHALL BE UNIFORMLY APPLIED AND MIXED INTO THE TOP 3 INCHES OF SOIL DURING FINAL TILLAGE OPERATIONS.
3. SLOW RELEASE NITROGEN AT THE RATE OF 35 POUNDS PER 1,000 SQUARE FEET SHALL BE APPLIED TO THE PREPARED SOIL JUST PRIOR TO SOD INSTALLATION. THIS MATERIAL SHALL BE APPROXIMATELY 1/3 IMMEDIATELY AVAILABLE AND 2/3 WATER INSOLUBLE NITROGEN UREA FORMALDEHYDE (UE) AND ISOBUTYLIDENE UREA (IBUD) MEET THESE STANDARDS.

SOD INSTALLATION:
1. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE, THE SOIL SHALL BE TIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD.
2. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. INSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR-DRYING OF THE ROOTS.
3. PEGGED SOD: ON SLOPING AREAS WHERE EROSION MAY BE A PROBLEM SOD SHALL BE LAID WITH LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERED JOINTS SECURE THE SOD BY TAMPING AND PEGGING OR OTHER APPROVED METHODS.
4. AS SODDING IS COMPLETED IN ANY ONE SECTION, THE ENTIRE AREA SHALL BE ROLLED OR TAMPED TO INSURE SOLID CONTACT OF ROOTS WITH SOIL SURFACE. SOD SHALL BE WATERED IMMEDIATELY AFTER ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

TEMPORARY SEEDING NOTES

PREPARATION
1. LIMING: AN EVALUATION SHOULD BE CONDUCTED TO DETERMINE IF LIME IS NECESSARY FOR TEMPORARY SEEDING. IN MOST SOILS, IT TAKES UP TO 6 MONTHS FOR A PH ADJUSTMENT TO OCCUR FOLLOWING THE APPLICATION OF LIME. THEREFORE, IT MAY BE DIFFICULT TO JUSTIFY THE COST OF LIMING A TEMPORARY SITE, ESPECIALLY WHEN THE SOIL WILL LATER BE MOVED AND REGARDED. THE FOLLOWING TABLE MAY BE USED TO DETERMINE THE ACTUAL NEED ALONG WITH THE SUGGESTED APPLICATION RATES.

LIMING REQUIREMENTS FOR TEMPORARY SITES

PH TEST	RECOMMENDED APPLICATION OF AGRICULTURAL LIMESTONE
BELOW 4.2	3 TONS PER ACRE
4.2 TO 5.2	2 TONS PER ACRE
5.3 TO 6	1 TON PER ACRE

2. FERTILIZER: SHALL BE APPLIED AS 600 LBS/ACRE OF 10-20-10 (14 LBS/1000 SF) OR EQUIVALENT NUTRIENTS. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2 TO 4 INCHES OF SOIL IF POSSIBLE
3. SURFACE ROUGHING: IF THE AREA HAS BEEN RECENTLY LOOSENED OR DISTURBED, NO FURTHER ROUGHENING IS REQUIRED. WHEN THE AREA IS COMPACTED, CRUSTED OR HARDENED, THE SOLID SURFACE SHALL BE LOOSENED BY DISCING, RAKING, HARROWING, OR OTHER ACCEPTABLE MEANS.
4. TRACKING: TRACKING WITH BULLDOZER CLEATS IS MOST EFFECTIVE ON SANDY SOILS. THIS PRACTICE OFTEN CAUSES UNDUE COMPACTION OF THE SOIL SURFACE, ESPECIALLY IN CLAYEY SOILS, AND DOES NOT AID PLAN GROWTH AS EFFECTIVELY AS OTHER METHODS OF SURFACE ROUGHENING.

SEEDING
SEED SHALL BE EVENLY APPLIED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRAINS SHALL BE PLANTED NO MORE THAN 1 ½ INCHES DEEP. SMALL SEEDS, SUCH AS KENTUCKY BLUEGRASS, SHOULD BE PLANTED NO MORE THAN ¼ INCH DEEP. OTHER GRASSES AND LEGUMES SHOULD BE PLANTED ½ TO ½ INCH DEEP.

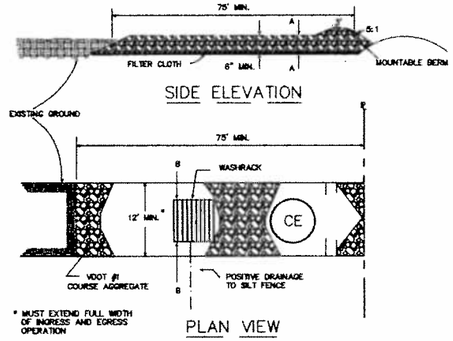
MULCHING
1. SEEDINGS MADE IN FALL FOR WINTER COVER AND DURING HOT AND DRY SUMMER MONTHS SHALL BE MULCHED USING STRAW MULCH.
2. TEMPORARY SEEDINGS MADE UNDER FAVORABLE SOILS AND SITE CONDITIONS DURING OPTIMUM SPRING AND FALL SEEDING DATES MAY NOT REQUIRE MULCH.

RE-SEEDING
AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RESEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED

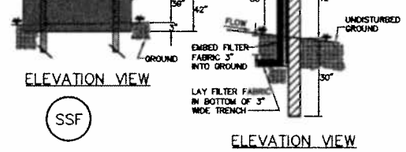
SEEDING PLANT MATERIALS
THE FOLLOWING GRASS SEED MAY BE USED TO ESTABLISH TEMPORARY COVER BASED ON THE TIME OF PLANTING.

PLANTING DATES	SPECIES	RATE (LBS/ACRE)
SEPT. 1 - FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTIFLORUM) & CEREAL (WINTER) RYE (SECALE CEREALE)	50-100
FEB. 16 - APR. 30	ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	50-100
MAY 1 - AUG. 31	GERMAN MILLET (SETARIA ITALICA)	50

(TEMPORARY SEEDING NOTES BASED ON RECOMMENDATIONS STATED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK)



1 STONE CONSTRUCTION ENTRANCE
SCALE: N/A



FENCING
CHAIN LINK FENCE SHALL BE 30" ABOVE GRADE WITH 3" EMBEDDED FOR A TOTAL FABRIC WIDTH OF 42". THE POST SHALL BE 42" ABOVE GRADE WITH 30" PLACED BELOW GRADE (WITHOUT CONCRETE) FOR A TOTAL LENGTH OF 72".

NOTES:
1. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES.
2. FILTER FABRIC SHALL BE FASTENED SECURELY TO CHAIN LINK FENCE WITH TIES SPACED HORIZONTALLY 24" AT THE TOP AND MIDSECTION.
3. PHYSICAL PROPERTIES OF THE FILTER FABRIC SHALL CONFORM TO THE LATEST EDITION OF THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK.
4. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, THEY SHALL OVERLAPPED BY 6".
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIALS SHALL BE REMOVED WHEN SEDIMENT BUILD-UP REACHED 50% OF THE HEIGHT OF THE SUPER SILT FENCE.

2 SUPER SILT FENCE
SCALE: N/A

3 CONSTRUCTION FENCE

CONSTRUCTION FENCE SHALL BE EIGHT (8) FOOT HIGH CHAIN LINK FENCE SECTIONS ATTACHED TO ONE AND FIVE EIGHTS (1 5/8) INCH OUTSIDE DIAMETER STEEL PIPE WITH ELEVEN (11) GAUGE MESH IN A TWO (2) INCH DIAMOND PATTERN. THE STEEL PIPE, FENCE POST, SHALL BE EIGHT (8) FOOT ON CENTER SPACING. FENCE POST CAN BE EITHER SET IN CONCRETE BLOCKS AT THE BASE OR SUNKEN INTO THE GROUND THREE (3) ADDITIONAL FOOT. FINAL LOCATIONS MAY VARY BASED ON FIELD CONDITIONS AND REQUIRES CITY APPROVAL.

NOTE
REFER TO NOTE 3, SHEET 11 FOR TREE PROTECTION FENCE.

NO.	DESCRIPTION	DATE	REV'D	REV'D	APP'D	DATE
	REVISION					

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — DAVID H. STEIGLER — Cert. No. 609 — 9/6/11 — LANDSCAPE ARCHITECT

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
EROSION AND SEDIMENT CONTROL NARRATIVE AND DETAILS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
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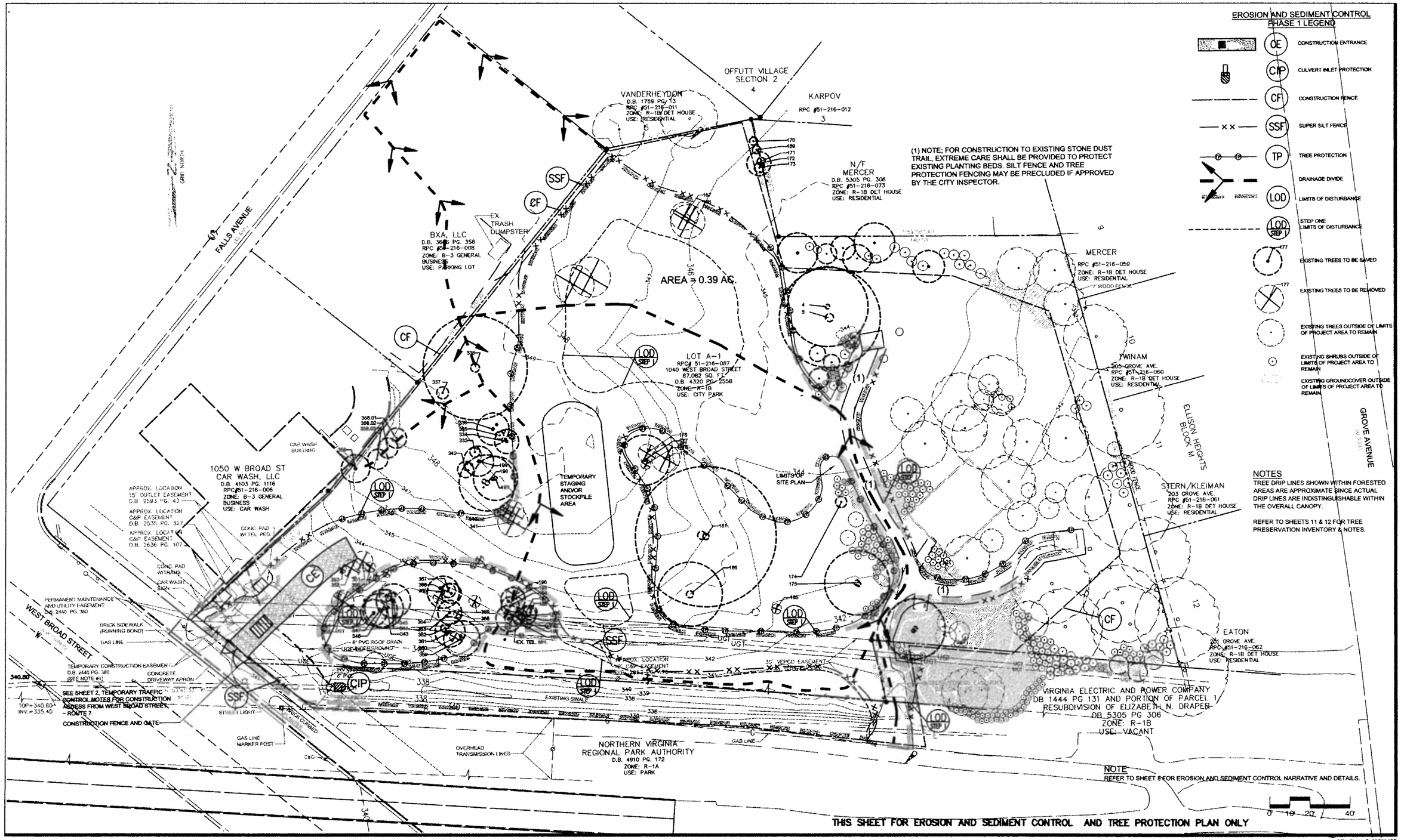
CITY PLAN # 20090407

DESIGN	SURVEY N/A
DRAWN SME	DATE JUNE 17, 2009
CHECKED DHS	SCALE N/A
SHEET C408ESC-NOTE 8 OF 21	FILE NO. 15907-1-0



NO.	DESCRIPTION	DATE	REVS'D	REW'D	APV'D	DATE
REVISION						

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — DAVID H. STRIGGS — Cert. No. 609 — 9/6/12 — LANDSCAPE ARCHITECT

PROJECT

WEST END PARK IMPROVEMENTS

CITY OF FALLS CHURCH, VA

TITLE

PHASE I EROSION AND SEDIMENT CONTROL / TREE

Patton Harris Rust & Associates, pc
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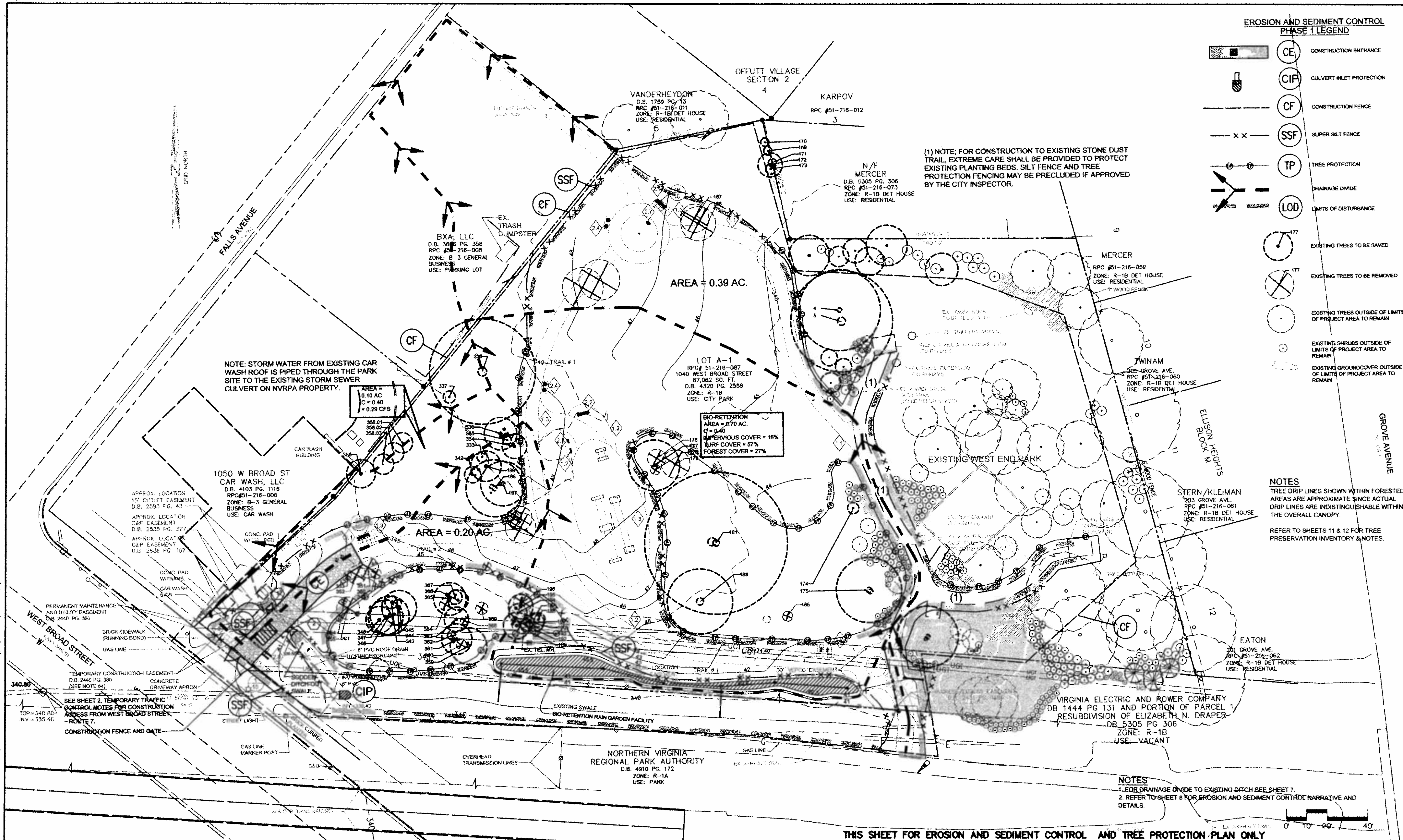
CITY PLAN # 20090407

DESIGN	PHR+A	SURVEY	PHR+A
DRAWN	SME	DATE	JUNE 17, 2009
CHECKED	DHS	SCALE	1" = 20'
SHEET	C409ESC 9 OF 21	FILE NO.	15907-1-0


EROSION AND SEDIMENT CONTROL PHASE 1 LEGEND
CE CONSTRUCTION ENTRANCE
CIP CULVERT INLET PROTECTION
CF CONSTRUCTION FENCE
SSF SUPER SILT FENCE
TP TREE PROTECTION
DRAINAGE DIVIDE
LOD LIMITS OF DISTURBANCE
EXISTING TREES TO BE SAVED
EXISTING TREES TO BE REMOVED
EXISTING TREES OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN
EXISTING SHRUBS OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN
EXISTING GROUNDCOVER OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN
NOTES
TREE DRIP LINES SHOWN WITHIN FORESTED AREAS ARE APPROXIMATE SINCE ACTUAL DRIP LINES ARE INDISTINGUISHABLE WITHIN THE OVERALL CANOPY.
REFER TO SHEETS 11 & 12 FOR TREE PRESERVATION INVENTORY & NOTES.
(1) NOTE; FOR CONSTRUCTION TO EXISTING STONE DUST TRAIL, EXTREME CARE SHALL BE PROVIDED TO PROTECT EXISTING PLANTING BEDS. SILT FENCE AND TREE PROTECTION FENCING MAY BE PRECLUDED IF APPROVED BY THE CITY INSPECTOR.
NOTE: STORM WATER FROM EXISTING CAR WASH ROOF IS PIPED THROUGH THE PARK SITE TO THE EXISTING STORM SEWER CULVERT ON NVRPA PROPERTY.
AREA = 0.10 AC. C = 0.40 Q = 0.29 CFS
OFFUTT VILLAGE SECTION 2
VANDERHEYDON
KARPOV
N/F MERCER
MERCER
TWINAM
STERN/KLEIMAN
EATON
ELLISON HEIGHTS BLOCK M
GROVE AVENUE
FALLS AVENUE
WEST BROAD STREET
BXA, LLC
1050 W BROAD ST CAR WASH, LLC
AREA = 0.39 AC.
AREA = 0.20 AC.
LOT A-1
RPC# 51-216-067
1040 WEST BROAD STREET
87,062 SQ. FT.
D.B. 4320 PG. 2558
ZONE: R-1B
USE: CITY PARK
BIO-RETENTION
AREA = 0.70 AC.
C = 0.40
IMPERVIOUS COVER = 16%
TURF COVER = 57%
FOREST COVER = 27%
EXISTING WEST END PARK
VIRGINIA ELECTRIC AND POWER COMPANY
DB 1444 PG 131 AND PORTION OF PARCEL 1
RESUBDIVISION OF ELIZABETH N. DRAPER
DB 5305 PG 306
ZONE: R-1B
USE: VACANT
NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
D.B. 4910 PG. 172
ZONE: R-1A
USE: PARK
SEE SHEET 2, TEMPORARY TRAFFIC CONTROL NOTES FOR CONSTRUCTION ACCESS FROM WEST BROAD STREET - ROUTE 7.
CONSTRUCTION FENCE AND GATE
BIO-RETENTION RAIN GARDEN FACILITY
NOTES
1. FOR DRAINAGE DIVIDE TO EXISTING DITCH SEE SHEET 7.
2. REFER TO SHEET 8 FOR EROSION AND SEDIMENT CONTROL NARRATIVE AND DETAILS.
0' 10' 20' 40'
THIS SHEET FOR EROSION AND SEDIMENT CONTROL AND TREE PROTECTION PLAN ONLY

CITY PLAN # 20090407

NO.	DESCRIPTION	DATE	REVS'D	REW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — DAVID H. STEIGLER — Cert. No. 609 — 9/6/12 — LANDSCAPE ARCHITECT

PROJECT

WEST END PARK IMPROVEMENTS

CITY OF FALLS CHURCH, VA

TITLE

PHASE II EROSION AND SEDIMENT CONTROL / TREE PRESERVATION PLAN

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DESIGN PHR+A	SURVEY PHR+A
DRAWN SME	DATE JUNE 17, 2009
CHECKED DHS	SCALE 1" = 20'
SHEET C410ESC 10 OF 21	FILE NO. 15907-1-0

TREE PRESERVATION PROCEDURES AND SPECIFICATIONS
City of Falls Church, VA - Urban Forestry / Development Services

1. Prior to allowing any vehicle or construction equipment to enter the site, the construction foreman and project arborist (also foreman of company doing actual tree work if different from project arborist) is to meet the City Arborist to mark the location of the *limits of clearing/ tree preservation fencing*, erosion control fabric, and root pruning line (where required), access routes, storage areas, and parking areas. The location of the LIMITS OF CLEARING/TREE PRESERVATION FENCING is to be installed in accordance with the approved plan and field located from existing benchmarks, landmarks, and building stakeout survey markers. All work procedures and tree preservation measures are to be discussed at this time. An appointment must be made with the arborist for the City a minimum of three days prior to the establishment of the tree preservation measures is required by City Code (Sec. 35-15 (b), see enclosed. Contact the City Arborist for an appointment at 703-248-5183.

2. Trees to be removed shall be clearly marked and approved by the City Arborist prior to demolition or entry of any equipment on site. A tree contractor licensed and bonded to work in the City shall perform all tree work, including all tree removals. Check with the City Arborist for a copy of the most recent list of Tree Contractors.

3. **Tree preservation fencing shall be either of the following:**

   a. Six (6) foot high chain link fence sections attached to one and five eights (1 5/8) inch outside diameter pipe with eleven (11) -gauge mesh in a two (2) inch diamond pattern. The fencing noted above may be temporary panels set in concrete blocks at the base and secured at the top with saddle clamps or

   b. Four (4) foot high fourteen (14) gauge welded wire fence supported by six (6) foot long metal stakes (2" width) to be spaced eight (8) feet on center and sunk into the ground.

   e-017,l0.480526;Both of the fencing types noted above shall be flagged with brightly colored surveyor ribbon to improve their visibility. The contractor must maintain fencing in place throughout construction. **In the event fencing must be temporarily removed for any reason, contact must be made first with the arborist at 703-248-5183**. The City Arborist must grant approval before any tree preservation fencing is removed, even temporarily.

4. Erosion and sediment control fencing shall be placed on the inside (toward construction) from the tree preservation fencing and any root-pruning trenches. Erosion control devices such as silt fencing, debris basins, and water diversion structures shall be installed to prevent siltation and/or erosion within the tree protection zone. Property owners are advised to impose fines in contracts with construction companies if tree preservation measures are violated.

5. **Demolition and Site Clearing:**

   a. The City Arborist shall be notified a minimum of three (3) days in advance of commencing any form of tree work. Call 703-248-5183 for an appointment.

   b. Trees to be removed shall be felled so as to fall away from tree protection zones and to avoid pulling breaking of roots of trees to remain. If roots are entwined, the consultant may require first severing the major woody root mass before extracting the trees. This may be accomplished by cutting through the roots by hand, with a vibrating knife, rock saw, and narrow trencher with sharp blades, or other approved root-pruning equipment.

   c. Trees being cut within the tree preservation zone shall be cut near ground level and the stumps ground out with a walk-behind grinding machine.

   d. All downed brush and trees shall be removed from the tree protection zone either by hand or with equipment sitting outside the tree protection zone. Extraction shall occur by lifting the material out, not by skidding it across the ground.

   e. Brush shall be chipped and placed in the tree protection zone to a depth of 6 inches, with no chips against the trunks of trees.

   f. Structures and underground features to be removed within the tree protection zone shall use the smallest equipment possible and operate from outside the tree protection zone. The City Arborist shall be present during all such operations within the tree protection zone to monitor demolition activity. Phone 703-248-5183 at least three (3) days in advance for an appointment.

   g. Any damage to trees due to demolition activities shall be reported to the City Arborist within 6 hours so that prompt remedial action can be taken.

   h. If temporary haul or access roads must pass over the root area of trees to be retained, a roadbed of at least 10 inches of mulch shall be created to protect the soil. The roadbed material shall be replenished as necessary to maintain a10-inch depth. The City Arborist must approve the use of any such temporary road in the tree protection area.

6. **Pruning & Other Preservation Measures Specifications:**

   a. The City Arborist shall be notified a minimum of three (3) days in advance of commencing any form of tree work. Call 703-248-5183 for an appointment.

   b. Root pruning, where required, shall be mechanically done with a narrow trencher with sharp blades. Once a trench is opened up, approximately 18-24" in depth and 4" wide all exposed roots will be hand pruned so that the clean-cut ends can regrow.

   The tree preservation fencing shall be placed 6-12" outside the root-pruning trench (construction side of the trench). The erosion and sediment fencing shall be placed outside the tree preservation fencing (construction side of the fence).

   Where required, apply a slow-release complete fertilizer containing major and trace elements, but low in water-soluble nitrogen during the season before the commencement of construction. An application of a *mychorrizae* product may also be required to assist in the preservation of highly stressed trees.

   c. All trees to be saved will be pruned (in accordance with American National Standards Institute (ANSI) Standard Practices for Trees, Shrubs, and Other Woody Plan Maintenance ANSI A300 and adhere to the most recent edition of ANSI Z133.1.

   d. Treat any disease or insect pest as required to reduce stress on trees.

   e. Remove all invasive vines growing on trees and from the area around the trees

   f. Specifications for work to be performed on individual trees shall be indicated under the "maintenance" column of the Tree Survey.

   g. All trees within the project area shall be pruned to:

      Clear the crown of diseased, crossing, weak, and dead wood to a minimum size of 1 ½ inches diameter;
      provide 14 feet of vertical clearance over streets and 8 feet over sidewalks;
      remove stubs, cutting outside the woundwood tissue that has formed around the branch;
      reduce end weight on heavy, horizontal branches selectively removing small diameter branches, no greater than 2 to 3 inches near the ends of the scaffolds.

   h. Where temporary clearance is needed for access, branches shall be tied back to hold them out of the clearance zone. The City Arborist must approve such tying.

   i. Pruning shall not be performed during periods of flight of adult boring insects because fresh wound attract pests. Pruning shall be performed only when the danger of infestation is past.

   j. All work must be performed by a tree contractor licensed and bonded to work in the City and in accordance with the direction of the project certified arborist and the City Arborist.

   k. Interior branches shall not be stripped out.

   l. Pruning cuts larger than 4 inches in diameter, except for dead wood, shall be avoided.

   m. Pruning cuts that expose heartwood shall be avoided whenever possible.

   n. No more than 20 percent of live foliage shall be removed from a tree at on time.

   o. While in the tree, the arborist shall perform an aerial inspection to identify defects that require treatment. Any addition work needed shall be reported to the City Arborist.

TREE PRESERVATION PROCEDURES AND SPECIFICATIONS CONTINUED
City of Falls Church, VA - Urban Forestry / Development Services

   p. Brush shall be chipped and chips shall be spread underneath trees within the tree protection zone to a maximum depth of 6 inches, leaving the trunk and root flare clear of chips.

   q. It may also be necessary to fertilize, aerate and otherwise treat the "trees to be saved" as required by the arborist for the City, following a meeting with the owner's/developer's arborist and approval of the "tree preservation plan". All tree work must be completed prior to construction.

   r. 'Selective clearing' in wooded areas will be allowed only under the direction of the City Arborist. Trees to be removed will be felled by hand so that minimal damage is done to "trees to be saved".

   s. No vehicles or storage of materials of any kind will be allowed inside the limits of clearing. No storage of material or debris will be allowed within the "tree save area". No burning will be allowed on site.

7. **Construction Specifications:**

   a. Supplemental water shall be supplied to trees being preserved when natural rainfall is less than 1" a week, from early spring until the ground freezes in the fall. Irrigation should be designed to wet the soil to a depth of 2-3 feet. Lacking a source of water early on the construction site, this may be accomplished by constructing a 6" berm around the tree protection zone and filling the basin with a water truck or by injecting the soil using a pressure system from a truck mounted water tank. Shallow frequent watering should be avoided.

   b. Have a licensed and bonded tree contractor remove torn, hazardous, or prominent deadwood as it occurs, using ANSI standards noted under # 4 above.

   c. Where construction traffic must occur in the area of tree roots it shall be necessary to apply the following procedure: cover undisturbed soil with 10-15 inches wood chips and topped with chain link fence pulled taught and anchored or topped with 5/8 to 3/4 inch plywood with non-skid surface.

   d. Where compection occurs during construction, vertical mulch with good quality compost.

   e. Before grading, pad preparation, or excavation for foundations, footings, walls, or trenching, relevant trees shall be root pruned 1 foot outside the tree protection zone by cutting all roots cleanly to a depth of 24 inches to the maximum depth of root penetration, (usually 3 feet). Roots shall be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root-pruning equipment. Pruned roots shall be promptly covered with soil.

   f. Any roots damaged during grading or construction shall be exposed to sound tissue and cut leanly with a saw and promptly covered with moist soil.

   g. Soil from trenches, basements or other excavations shall not be placed within the tree protection zone, either temporarily or permanently. Soil stockpiles should be placed only in previously designated areas. No vehicles or construction equipment shall be parked in the tree protection zone.

   h. No burn piles or debris pits shall be placed within the tree protection zone. No ashes, debris or garbage may be dumped or buried within the tree protection zone. No materials of any kind shall be stored in the tree protection zone.

   i. Maintain fire-safe areas around fenced areas. Also, no heat sources, flames, ignition sources, or smoking is allowed near mulch of trees.

   j. A copy of the "approved plan" and TREE PRESERVATION PROCEDURES AND SPECIFICATIONS must be maintained on site at all times.

   k. All underground utilities and drain or irrigation lines shall be routed outside the tree protection zone. If lines must traverse the protection area, they shall be tunneled or bored under the tree(s) with the approval of the City Arborist.

   l. A licensed and bonded tree contractor must perform additional tree pruning required for clearance during construction under the direction of the City Arborist. Construction workers shall not be allowed to prune trees.

   m. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. Any pesticides used on site must be tree-safe and not easily transported by water.

   n. If injury should occur to any tree during construction, it should be treated as soon as possible under the direction of the City Arborist.

   o. The City Arborist must monitor any grading, construction, demolition, or other work that is expected to encounter tree roots.

   p. At the completion of construction (and all equipment has been removed from site), notify the City Arborist for an inspection before removing the tree preservation fencing. At this time, all trees will be inspected and any repairs needed will be stipulated by the City and promptly made by the Contractor. (Refer to Sec. 35-15(b) of the City Code for guidance on finalizing the requirements of the bond agreement.

8. The planting of the new tree(s) specified on the plan shall take place after the completion of construction. The City Arborist must inspect the trees prior to planting (see Arborist Notification) and also inspect the placement and installation of the tree(s). All products and workmanship related to the planting of the tree(s) must be in accordance with the **Tree Planting Specifications** attached. The Contractor/Owner must present the City with a copy of a one-year guarantee from the landscape contractor for the newly planted tree(s). The tree will need to be thriving and in good condition one year from the date of planting or will need to be replaced.

   e-017;e-017,l0.480909;**If you have questions on any of the "procedures" or "specifications" noted above or concerns that may arise during construction, please contact the City Arborist at (703) 248-5183 or the Senior Urban Forester at (703) 248-5016.**

ARBORIST NOTIFICATION:

THE CITY OF FALLS CHURCH ARBORIST MUST BE NOTIFIED A MINIMUM OF THREE (3) DAYS PRIOR TO REMOVAL, PRUNING, OR PLANTING OF ANY TREES OR PLANT MATERIAL. THE PROPOSED PLANT MATERIAL IS TO BE INSPECTED PRIOR TO PLANTING BY THE CITY ARBORIST AND PROJECT'S LANDSCAPE ARCHITECT. PLANTS THAT HAVE NOT BEEN INSPECTED BY THE CITY ARBORIST SHALL BE REJECTED. TO ARRANGE AN APPOINTMENT CALL (703) 248-5183.

NOTE: The general contractor is responsible for stockpiling all topsoil acquired in any site excavation of hardscape features such as walks, curbs, etc. Finish grading around these curbs, walks and plant beds at building foundations will be brought to within .1 of one foot of the grades shown on the civil engineering plan. The owner/landscape contractor is responsible for all finish grading within 0 - .1 of a foot site stabilization, and the final landscape installation.

TREE REMOVAL AND PRESERVATION NOTES
City of Falls Church, VA - Urban Forestry / Development Services

Tree Preservation Plan - West End Park Improvements Plan

Tree ID	Botanical Name	Common Name	Size (dbh)	Preservation Measure	Save/Remove	Comment
4	*Quercus alba*	White oak	35	install pathway by hand throughout dripline of tree; install TPF	SAVE	
5	*Quercus alba*	White oak	25	install pathway by hand throughout dripline of tree; install TPF	SAVE	
167	*Morus alba*	White mulberry	19/16/7/7	none	REMOVE	within LOC
169	*Morus alba*	White mulberry	4	install TPF	SAVE	appears co owned
170	*Morus alba*	White mulberry	4	install TPF	SAVE	appears co owned
171	*Morus alba*	White mulberry	4	install TPF	SAVE	appears co owned
172	*Morus alba*	White mulberry	12	install TPF	SAVE	appears co owned
173	*Morus alba*	White mulberry	5	install TPF	SAVE	appears co owned
174	*Ilex x attenuata "Fosteri"*	Foster's holly	5	install TPF	SAVE	
175	*Quercus palustris*	Pin oak	15	install TPF	SAVE	
176	*Acer platanoides*	Norway maple	11/11/12/11	none	REMOVE	highly invasive
177	*Quercus alba*	White oak	14/7	install TPF	SAVE	
178	*Prunus serotina*	Black cherry	5	none	REMOVE	
179	*Prunus serotina*	Black cherry	14/13	none	REMOVE	
180	*Acer platanoides*	Norway maple	4/5	no longer exists	REMOVED	
181	*Quercus alba*	White oak	39	install TPF	SAVE	
182	*Acer platanoides*	Norway maple	11	no longer exists	REMOVED	
183	*Acer platanoides*	Norway maple	4	no longer exists	REMOVED	
184	*Prunus serotina*	Black cherry	11	no longer exists		
185	*Acer platanoides*	Norway maple	6	none	REMOVE	highly invasive
186	*Ilex opaca*	American holly	15/9/7/7	install TPF	SAVE	
187	*Prunus serotina*	Black cherry	5	install TPF	SAVE	
188	*Prunus serotina*	Black cherry	7	none	REMOVE	
189	*Prunus serotina*	Black cherry	9	none	REMOVE	
190	*Quercus palustris*	Pin oak	5	install TPF	SAVE	
191	*Prunus serotina*	Black cherry	10	none	REMOVE	
192	*Quercus palustris*	Pin oak	5	install TPF	SAVE	
193	*Ulmus americana*	American elm	13	install TPF	SAVE	
197	*Ilex opaca*	American holly	19	install TPF	SAVE	
198	*Robinia pseudoacacia*	Black locust	23	install TPF	REMOVE	
199	*Robinia pseudoacacia*	Black locust	15	install TPF	REMOVE	
333	*Prunus serotina*	Black cherry	4/5	none	REMOVE	LOC - phase 2
334	*Acer plantanoides*	Norway maple	12	none	REMOVE	highly invasive
335	*Acer plantanoides*	Norway maple	11 1/3	none	REMOVE	highly invasive
335.01	*Prunus serotina*	Black cherry	15	none	REMOVE	highly invasive
336	*Ulmus americana*	American elm	14	none	REMOVE	LOC - phase 2
337	*Prunus serotina*	Black cherry	5	none	REMOVE	LOC - phase 2
338	*Prunus serotina*	Black cherry	15/15/15	install TPF	SAVE	
339	*not on plan*		PLEASE REMOVE FROM PRELIMINARY TREE SURVEY			
340	*Prunus serotina*	Black cherry	12	none	REMOVE	within LOC
341	*Prunus serotina*	Black cherry	14	none	REMOVE	within LOC
342	*Prunus serotina*	Black cherry	4/5	none	REMOVE	LOC - phase 2
343	*Acer plantanoides*	Norway maple	5	none	REMOVE	highly invasive
344	*Acer plantanoides*	Norway maple	4	none	REMOVE	highly invasive
345	*Robinia pseudoacacia*	Black locust	17	install TPF	SAVE	
346	*Robinia pseudoacacia*	Black locust	10/14	install TPF	SAVE	
347	*Robinia pseudoacacia*	Black locust	14	install TPF	SAVE	
348	*Robinia pseudoacacia*	Black locust	13	install TPF	SAVE	
349	*Acer plantanoides*	Norway maple	3	none	REMOVE	within LOC
350	*Acer plantanoides*	Norway maple	4	none	REMOVE	within LOC
351	*Acer negundo*	box elder	4/5	none	REMOVE	within LOC
352	*Juglans nigra*	Black walnut	7	none	REMOVE	within LOC
353	*Juglans nigra*	Black walnut	4	none	REMOVE	within LOC
354	*Prunus serotina*	Black cherry	3	none	REMOVE	within LOC
355	*Juglans nigra*	Black walnut	10	none	REMOVE	within LOC
356	*Photinia fraseri*	Photinia	7'	install TPF	SAVE	adjust LOC
357	*no longer exists*	REMOVE				
358	*no longer exists*	REMOVE				
358.01	*Arborvitae*	White cedar	6'	install TPF	SAVE	adjust LOC
358.02	*Arborvitae*	White cedar	6'	install TPF	SAVE	adjust LOC
358.03	*Arborvitae*	White cedar	6'	install TPF	SAVE	adjust LOC
359	*Robinia pseudoacacia*	Black locust	14	install TPF	SAVE	
360	*Diospyros virginiana*	Persimmon	3	none	REMOVE	
361	*Robinia pseudoacacia*	Black locust	15	install TPF	SAVE	
362	*unknown species*	dead	4	none	REMOVE	
363	*Prunus serotina*	Black cherry	12/8/10	install TPF	SAVE	
364	*Prunus serotina*	Black cherry	5	none	REMOVE	
365	*Robinia pseudoacacia*	Black locust	17/17	install TPF	SAVE	
366	*Robinia pseudoacacia*	Black locust	10	install TPF	SAVE	
367	*Prunus serotina*	Black cherry	4	none	REMOVE	
368	*Prunus serotina*	Black cherry	3	none	REMOVE	
369	*Prunus serotina*	Black cherry	3	none	REMOVE	

07.01.09 Jill-Anne Spence
ISA Certified Arborist MA-3203am

TPF - tree protection fence
LOC -limits of clearing and grading

THIS SHEET FOR TREE PROTECTION ONLY

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APR'D	DATE
	REVISION					

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — DAVID H. STIEGLER — Cert. No. 609 — LANDSCAPE ARCHITECT — 9/16/12

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
TREE PRESERVATION NOTES

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CITY PLAN # 20080407

DESIGN: PHR+A	SURVEY: PHR+A
DRAWN: SME	DATE: JUNE 17, 2009
CHECKED: DHS	SCALE: N/A
SHEET: C411TP 11 OF 21	FILE NO.: 15907-1-0

TREE PRESERVATION INVENTORY NOTE:

CONTRACTOR SHALL REFER TO SHEETS 9&10, THE EROSION AND SEDIMENT CONTROL/TREE PRESERVATION PLAN, AND SHEET 11, TREE PRESERVATION NOTES FOR REMOVAL AND PRESERVATION. THE INVENTORY PROVIDED ON THIS SHEET SHALL IS PROVIDED AS INFORMATION ONLY AND SHALL NOT BE USED BY THE CONTRACTOR FOR TREE REMOVAL AND PRESERVATION.

Appendix
Tree Inventory
West End View Park
City of Falls Church, Virginia
February 24, 2009

Prepared by
Edward P. Milhous
TreesPlease®

ASCA RCA #350 ISA #MA-0004A MD TE #458

Tree #	Name	Size	Condition	Comment	Recommendation
4	white oak *Quercus alba* Species Rating: 95% RULE: 51-100	34	.75	This tree would be desirable in a new setting. Dead branches in this tree's crown are a minor problem.	
5	white oak *Quercus alba* Species Rating: 95% RULE: 51-100	25	.75	This tree would be desirable in a new setting. Dead branches in this tree's crown are a minor problem.	
167	white mulberry *Morus alba* Species Rating: 30% RULE: 26-50	19/16/7/7	.69	One of the worst invasive exotics, it is an undesirable tree. Included bark is evident. Also tagged #168	
169	white mulberry *Morus alba* Species Rating: 30% RULE: 6-10	4	.75	One of the worst invasive exotics, it is an undesirable tree.	
170	white mulberry *Morus alba* Species Rating: 30% RULE: 6-10	4	.75	One of the worst invasive exotics, it is an undesirable tree. This tree leans excessively.	
171	white mulberry *Morus alba* Species Rating: 30% RULE: 6-10	4	.75	One of the worst invasive exotics, it is an undesirable tree.	
172	white mulberry *Morus alba* Species Rating: 30% RULE: 6-10	12	.75	One of the worst invasive exotics, it is an undesirable tree.	
173	white mulberry *Morus alba* Species Rating: 30% RULE: 6-10	5	.75	One of the worst invasive exotics, it is an undesirable tree.	
174	Foster's holly *Ilex x attenuata* 'Fosteri' Species Rating: 85% RULE: 26-50	5	.75		
175	pin oak *Quercus palustris* Species Rating: 70% RULE: 26-50	15	.75	Bark was damaged near the base of the tree years ago.	
176	Norway maple *Acer platanoides* Species Rating: 45% RULE: 6-10	11/11/12/11	.66	Norway maple is a popular but invasive exotic species. This tree crowds a better tree. English ivy is attached to this tree's trunk.	
177	white oak *Quercus alba* Species Rating: 95% RULE: 51-100	14/7	.75	Assorted vines are attached to this tree's trunk. This tree is crowded.	
178	black cherry *Prunus serotina* Species Rating: 60% RULE: 6-10	5	.69	This tree leans excessively. This tree crowds a better tree.	
179	black cherry *Prunus serotina* Species Rating: 60% RULE: 11-25	14/13	.72	English ivy is attached to this tree's trunk. This tree crowds a better tree.	
181	white oak *Quercus alba* Species Rating: 95% RULE: 11-25	39	.66	Dead branches in this tree's crown are a minor problem. There is sparse growth in this tree. This tree is crowded.	Clean of wood 1.5" or larger. A treatment of pachlobutrazol *may* reinvigorate this tree.
185	Norway maple *Acer platanoides* Species Rating: 45% RULE: 1-5	6	.75	Norway maple is a popular but invasive exotic species. This tree crowds a better tree.	
186	American holly *Ilex opaca* Species Rating: 85% RULE: 51-100	15/8/7/7	.72	Included bark is evident.	
187	black cherry *Prunus serotina* Species Rating: 60% RULE: 11-25	5	.75	This tree is crowded.	
188	black cherry *Prunus serotina* Species Rating: 60% RULE: 6-10	7	.69	This tree leans excessively. This tree is crowded.	

Tree #	Name	Size	Condition	Comment	Recommendation
189	black cherry *Prunus serotina* Species Rating: 60% RULE: 11-25	9	.75	This tree is crowded.	
190	pin oak *Quercus palustris* Species Rating: 70% RULE: 26-50	5	.75	This tree is crowded.	
191	black cherry *Prunus serotina* Species Rating: 60% RULE: 11-25	10	.69	This tree leans excessively. This tree is crowded. Assorted vines are attached to this tree's trunk.	
192	pin oak *Quercus palustris* Species Rating: 70% RULE: 26-50	5	.75	Assorted vines are attached to this tree's trunk.	
193	American elm *Ulmus americana* Species Rating: 35% RULE: 11-25	13	.75	*Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk. Dutch elm disease is a threat to any American elm.	Clear away obstructions so observations can be made.
197	American holly *Ilex opaca* Species Rating: 85% RULE: 26-50	19	.75	This is a pistillate (female) tree. Vandalized: initials carved into trunk.	
198	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 11-25	23	.75	Black locusts are okay when small, but are not long-lived.	Prune out black cherry at its base.
199	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 11-25	15	.75	*Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk.	Clear away obstructions so observations can be made.
333	black cherry *Prunus serotina* Species Rating: 60% RULE: 26-50	4/5	.5	There is sparse growth in this tree. This tree is suppressed (dominated) by a larger tree.	Do not save this tree… remove it when clearing.
334	Norway maple *Acer platanoides* Species Rating: 45% RULE: 1-5	12	.66	Norway maple is a popular but invasive exotic species. It appears this tree was uprooted a number of years ago.	Do not save this tree… remove it when clearing.
335	Norway maple *Acer platanoides* Species Rating: 45% RULE: 26-50	4/3	.75	Norway maple is a popular but invasive exotic species.	
335.01	black cherry *Prunus serotina* Species Rating: 60% RULE: 1-5	15	.63	It appears this tree was uprooted a number of years ago. near tree #335	
336	American elm *Ulmus americana* Species Rating: 35% RULE: 11-25	14	.75	Assorted vines are attached to this tree's trunk. Dutch elm disease is a threat to any American elm.	
337	black cherry *Prunus serotina* Species Rating: 60% RULE: 26-50	5	.75		
338	black cherry *Prunus serotina* Species Rating: 60% RULE: 11-25	15/15/15	.69	*Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk.	Clear away obstructions so observations can be made.
340	black cherry *Prunus serotina* Species Rating: 60% RULE: 26-50	12	.75	*Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk.	Clear away obstructions so observations can be made.
341	black cherry *Prunus serotina* Species Rating: 60% RULE: 26-50	14	.75	*Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk.	Clear away obstructions so observations can be made.
342	black cherry *Prunus serotina* Species Rating: 60% RULE: 11-25	4/7	.69	Assorted vines are attached to this tree's trunk. This tree leans excessively.	
343	Norway maple *Acer platanoides* Species Rating: 45% RULE: 1-5	5	.59	Norway maple is a popular but invasive exotic species. Bark has been damaged near the base of the tree.	
344	Norway maple *Acer platanoides* Species Rating: 45% RULE: 1-5	4	.66	Norway maple is a popular but invasive exotic species. Borer damage is evident.	
345	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 11-25	17	.75	Black locusts are okay when small, but are not long-lived.	
346	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 6-10	10/14	.63	Black locusts are okay when small, but are not long-lived. *Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk. One leader is dead.	Clear away obstructions so observations can be made. Prune out the dead leader.

Tree #	Name	Size	Condition	Comment	Recommendation
347	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 11-25	14	.75	*Obscured hazard:* This tree's trunk is hidden from view. English ivy is attached to this tree's trunk. Black locusts are okay when small, but are not long-lived.	Clear away obstructions so observations can be made.
348	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 6-10	13	.5	*Obscured hazard:* This tree's trunk is hidden from view. English ivy is attached to this tree's trunk. Improperly pruned: this tree was topped years ago. Black locusts are okay when small, but are not long-lived.	Clear away obstructions so observations can be made.
349	Norway maple *Acer platanoides* Species Rating: 45% RULE: 11-25	3	.75	Norway maple is a popular but invasive exotic species.	
350	Norway maple *Acer platanoides* Species Rating: 45% RULE: 11-25	4	.75	Norway maple is a popular but invasive exotic species.	
351	boxelder *Acer negundo* Species Rating: 35% RULE: 11-25	4/5	.69	Female trees harbor boxelder bugs, a nuisance pest. This is a pistillate (female) tree. This tree leans excessively.	Do not save this tree… remove it when clearing.
352	black walnut *Juglans nigra* Species Rating: 80% RULE: 26-50	7	.75	Assorted vines are attached to this tree's trunk.	
353	black walnut *Juglans nigra* Species Rating: 80% RULE: 11-25	4	.66	This tree has a poor form.	
354	black cherry *Prunus serotina* Species Rating: 60% RULE: 26-50	3	.75		
355	black walnut *Juglans nigra* Species Rating: 80% RULE: 51-100	10	.75		
359	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 11-25	14	.75	*Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk. Black locusts are okay when small, but are not long-lived.	Clear away obstructions so observations can be made.
360	persimmon *Diospyros virginiana* Species Rating: 85% RULE: 51-100	3	.75	This tree would be desirable in a new setting. This tree has no chance of surviving construction.	Do not save this tree… remove it when clearing.
361	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 11-25	15	.75	*Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk. Black locusts are okay when small, but are not long-lived.	Clear away obstructions so observations can be made.
362	unidentified RULE: 0	4	0	This tree is dead.	
363	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 6-10	12/6/10	.66	*Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk. Black locusts are okay when small, but are not long-lived.	
364	black cherry *Prunus serotina* Species Rating: 60% RULE: 11-25	5	.75	This tree would be desirable in a new setting. This tree has no chance of surviving construction.	Do not save this tree… remove it when clearing.
365	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 11-25	17/17	.69	*Obscured hazard:* This tree's trunk is hidden from view. Assorted vines are attached to this tree's trunk. Black locusts are okay when small, but are not long-lived.	Clear away obstructions so observations can be made.
366	black locust *Robinia pseudoacacia* Species Rating: 50% RULE: 11-25	10	.75	Assorted vines are attached to this tree's trunk. Black locusts are okay when small, but are not long-lived.	
367	black cherry *Prunus serotina* Species Rating: 60% RULE: 11-25	4	.75		
368	black cherry *Prunus serotina* Species Rating: 60% RULE: 6-10	3	.63	This tree has a poor form.	
369	black cherry *Prunus serotina* Species Rating: 60% RULE: 6-10	3	.63	This tree has a poor form. This tree has no chance of surviving construction.	
	Average species rating	57			
* 356	Photinia *Photinia spp.* Species Rating 66% Rule 11-25	17' ht.	.75	Stand of three photinias.	Save these Tree.
* 358.01	Arborvitae *Thuja spp.* Species Rating 75% Rule 11-25	12' ht.	.55	This tree is crowded but worthy for screening.	Save this Tree.
* 358.02	Arborvitae *Thuja spp.* Species Rating 75% Rule 11-25	14'ht.	.75		Save this Tree.
* 358.03	Arborvitae *Thuja spp.* Species Rating 75% Rule 11-25	15'ht.	.75		Save this Tree.

* Trees added to the tree inventory by PHR+A per city comments. The revised Average species rating is 58.

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 600
LANDSCAPE ARCHITECT
[illegible]

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
TREE INVENTORY

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

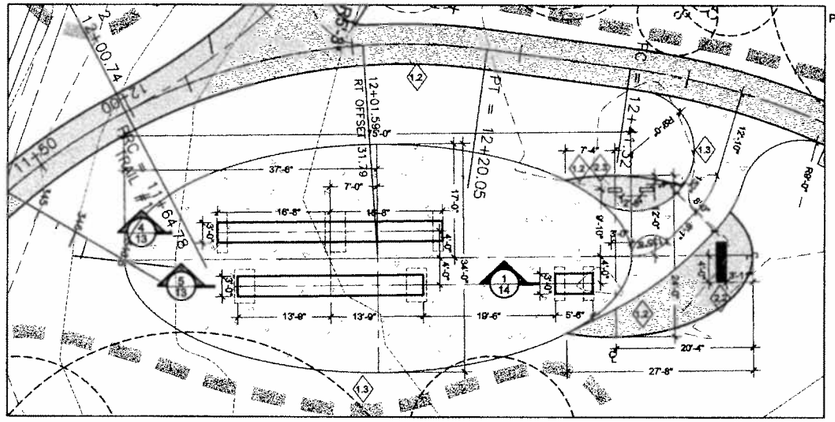
CITY PLAN # 20090407

DESIGN	SURVEY
PHR+A	PHR+A
DRAWN SME	DATE JUNE 17, 2009
CHECKED DHS	SCALE N/A
SHEET C412TP 12 OF 21	FILE NO. 15907-1-0

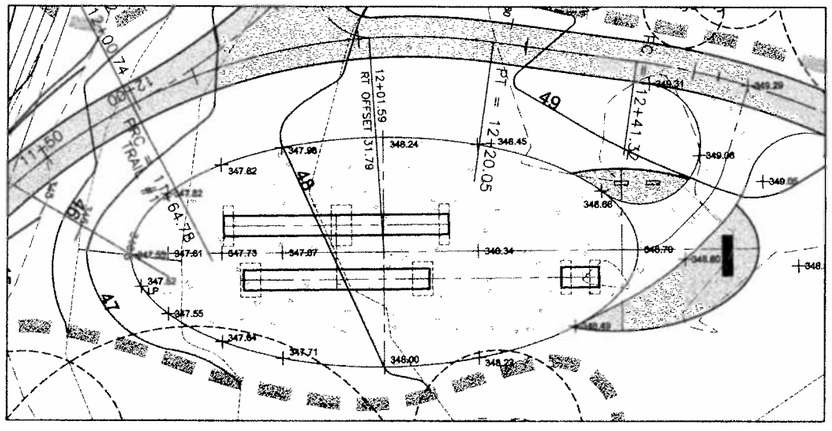
1 SKATEABLE ELEMENTS NARRATIVE

THREE (3) PRE-CAST CONCRETE ELEMENTS ARE PROPOSED WITHIN THE SKATE AREA AS SHOWN ON THE PLANS BELOW. THESE ELEMENTS, ENTITLED THE RIBBON, WHALE TAIL, AND WHALE TAIL RETURN, SHALL BE PROVIDED BY SPOHN RANCH INC (SRI), WWW.SPOHNRANCH.COM <http://WWW.SPOHNRANCH.COM> ; 877 489-3539.

BESIDES SHIPPING AND HANDLING, SRI PROVIDES CERTIFIED INSTALLATION FOR THE ELEMENTS. THE CONTRACTOR SHALL PROVIDE ALL REMAINING SERVICES AND ITEMS, INCLUDING ALL FOOTINGS AND SURROUNDING CONCRETE PAD. A PRELIMINARY GEOTECHNICAL REPORT IS AVAILABLE FOR REVIEW, BUT IT IS ANTICIPATED THAT A FINAL REPORT WILL BE REQUIRED (CITY OF FALLS CHURCH TO PROVIDE). ANCHORING DETAILS AND SRI CONDITIONS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL WORK DIRECTLY WITH SRI FOR PRODUCT AND INSTALLATION INFORMATION AND REQUIREMENTS.



2 LAYOUT PLAN
SCALE: 1" = 10'-0"

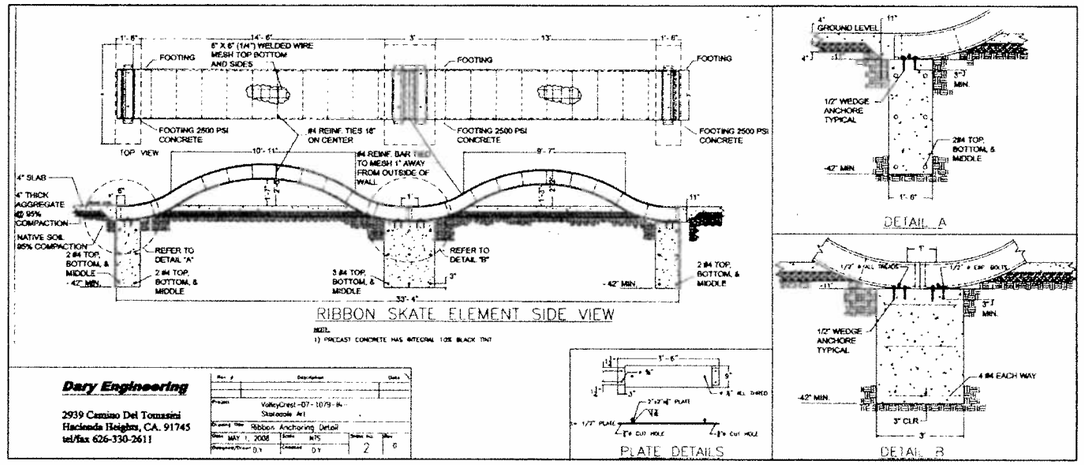


3 GRADING PLAN
SCALE: 1" = 10'-0"

SIGNED AND SEALED FOR LAYOUT PLAN AND GRADING PLAN ONLY.

MATERIAL KEY

	DETAIL # / PAGE
PAVING	
1.1 STONE DUST TRAIL	2/2
1.2 ASPHALT TRAIL	1/2
1.3 CONCRETE	3/2
1.4 CONCRETE PAVERS	5/2
SITE FURNISHINGS & ELEMENTS	
2.1 BENCH	5/15
2.2 SKATE PARK BENCH	6/13
2.3 BICYCLE RACKS	7/13
2.4 TRASH & RECYCLING RECEPTACLES	6/15

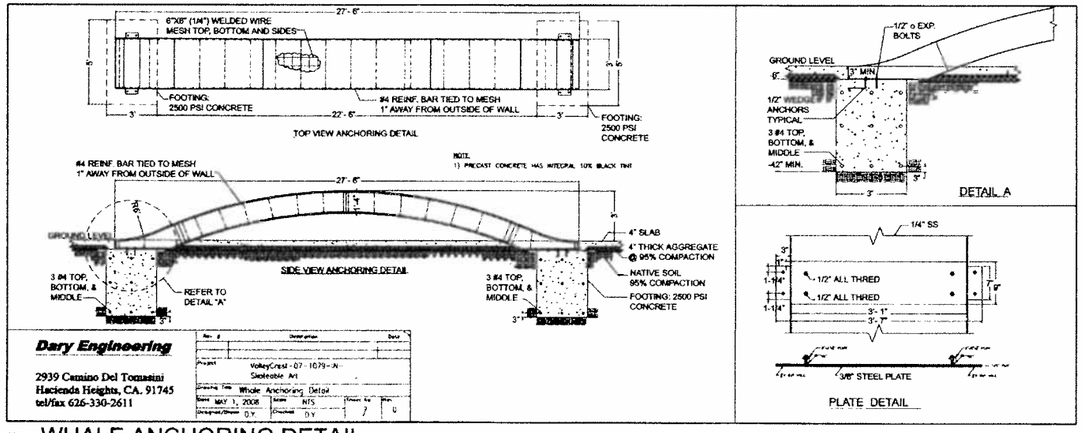


Dary Engineering
2939 Camino Del Tomasini
Hacienda Heights, CA. 91745
tel/fax 626-330-2611

Rev. #	Description	Date

Project: Valleycrest -07 - 1079 - N - Skateable Art
Drawing Title: Ribbon Anchoring Detail
Date: MAY 1, 2008 | Scale: NTS | Sheet No.: 2 | No.: 6
Designed/Drawn: DY | Checked: DY

4 RIBBON ANCHORING DETAIL
SCALE: N/A



Dary Engineering
2939 Camino Del Tomasini
Hacienda Heights, CA. 91745
tel/fax 626-330-2611

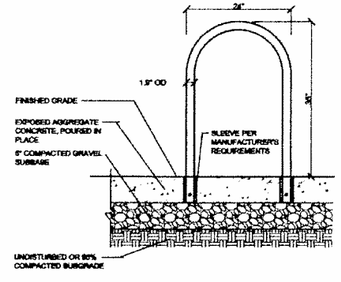
Rev. #	Description	Date

Project: Valleycrest -07 - 1079 - N - Skateable Art
Drawing Title: Whale Anchoring Detail
Date: MAY 1, 2008 | Scale: NTS | Sheet No.: 7 | No.: 6
Designed/Drawn: DY | Checked: DY

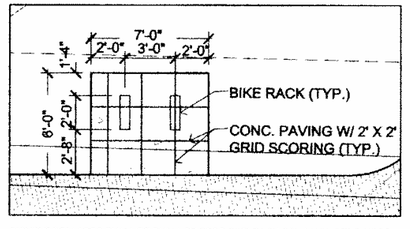
5 WHALE ANCHORING DETAIL
SCALE: N/A

SKATE PARK BENCH SHALL BE HIGHLAND PRODUTS GROUP LLC MODEL 154-1210, FLAT CONCRETE BENCH 6' LENGTH, OR APPROVED EQUAL. FINISH SHALL BE POLISHED SMOOTH COLOR SHALL MATCH SKATE FEATURES OR APPROVED SUBSTITUTION. WWW.HIGHLANDPRODUCTSGROUP.COM

6 BENCH DETAIL
SCALE: N/A



7 BICYCLE RACK DETAIL
SCALE: N/A



BICYCLE BOLLARDS SHALL BE SHALL BE DERO BIKE RACK COMPANY, DERO HOOP RACK, GALVANIZED STEEL WITH POWDERCOAT LIGHT GRAY FINISH, OR APPROVED EQUAL. INSTALLATION SHALL BE EMBEDMENT MOUNT OR APPROVED SUBSTITUTION DERO BIKE RACK COMPANY 888-337-6729 www.dero.com

NOTE: FOR THE TWO BIKE RACKS IN ASPHALT-PAVED AREA NEAR SKATEBOARD AREA, PROVIDE DEEPER SLEEVES IN CONCRETE FOOTING WITH ASPHALT PAVING EXTENDING OVER CONCRETE FOOTING UP TO BASE OF BIKE RACK.

NO.	DESCRIPTION	DATE	REVS'D	REV'D	APRV'D	DATE
	REVISION					

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEGGER
Cert. No. 600
9/6/11
LANDSCAPE ARCHITECT

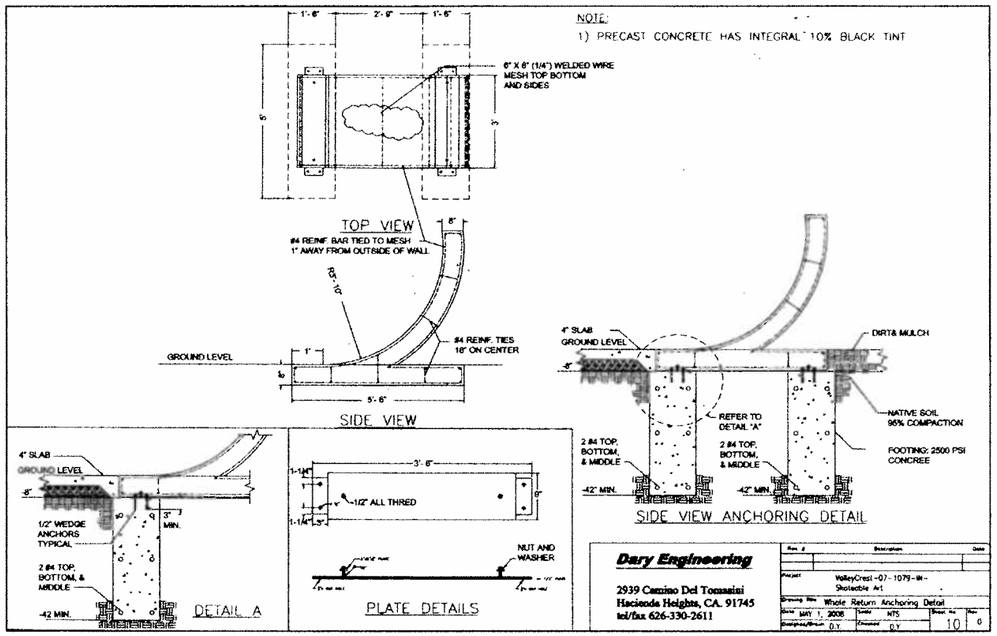
PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
SKATE AREA

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CITY PLAN # 20090407

DESIGN	PHR+A	SURVEY	PHR+A
DRAWN	SME	DATE	JUNE 17, 2009
CHECKED	DHS	SCALE	AS SHOWN
SHEET	C413-14 13 OF 21	FILE NO.	15907-1-0



1 WHALE RETURN ANCHORING DETAIL
SCALE: N/A

SPOHNCRETE CONDITIONS

GENERAL PROJECT ASSUMPTIONS

- All written documents will be generated using Microsoft Word, Version 2004
- All spreadsheet documents will be generated using Microsoft Excel, Version 2004
- Spohn Ranch, Inc. (hereafter, SRI) shall provide PDF files of the technical specifications for items in their scope
- SRI shall only be responsible for the skating area, unless specifically contracted otherwise

RESPONSIBILITIES OF THE CLIENT—INFORMATION REQUIRED

- The Client shall provide all existing digital files to SRI accurately portraying boundaries of the selected site, existing grading, utilities, drainage, and site amenities in AutoCAD 2008 format or earlier
- The Client is responsible for retaining the services of a Structural Engineer, Civil Engineer, Electrical Engineer, Architect, Surveyor, Geotechnical Engineer, or any other specialty consultants that may be required for the project
  - All drawings will be reviewed and stamped by engineer retained by the Client
- The Client shall provide SRI with a description of the process for approving reports, plans, specifications, and costs
- The Client shall provide SRI with any specifications, details, or title blocks required by Client
- The Client shall provide SRI with all available information for utilities including electrical, water, sewer, irrigation and gas prior to commencing work
- The Client shall provide all existing plans for the site, including any improvements, grading, facilities, drainage information, and site survey in digital format (.dxf, .dwg, or .pdf)
- The Client shall provide SRI with complete contact information for all utility companies serving the site
  - The utilities shall provide SRI with underground utility locations and easement information
- The Client shall provide SRI with a current field survey locating all above- and below- ground utilities, appurtenances, structures, and easements
  - If a current survey does not exist it shall be the responsibility of the Client to coordinate the on-site mapping and development of a survey
  - The survey shall be in digital format that can easily be used with AutoCAD software
- The Client shall provide SRI with a current overall base map displaying the site's relief through contour (maximum 1-foot contour interval) and spot elevations, in digital format that can easily be used with AutoCAD software
  - All existing hardscape and structure foundations shall be delineated with spot elevations
- The Client shall provide SRI with a current (less than 12 months old) Geotechnical Report prepared specifically for the project site, completed and sealed by a Geotechnical Engineer registered in the state where the project is located
  - If the report is over 12 months old, the original firm issuing the report shall provide a letter certifying that the report is still valid and no updates are needed, dated within 30 days of receipt of the Geotechnical Report
  - The Geotechnical Report shall include the following at a minimum—vicinity map of the project limits, plot plan/ aerial showing location of borings, detailed description of the findings and recommendations, a detailed report of the laboratory tests performed, and an executive summary stating general findings and recommendations
- All permits required, unless specifically included in SRI's proposal, are the responsibility of the Client
- The Client is solely responsible for verifying and properly zoning the skatepark site prior to the outset of the project
  - The Client certifies that the site is properly zoned for the intended use
  - In the event that zoning or variances delay the project, the Client shall be solely responsible for any additional costs associated with these delays

SIGNED AND SEALED FOR INCLUSION IN SET ONLY.

TAXES/ PREVAILING WAGE/ BONDING

- Prices do not include any sales or special taxes, any importation / exportation duties, freight forwarding, or customs
  - The Client is solely responsible for informing SR of any such taxes or fees to which they are subject
- Prevailing wage is not included in the base price
  - If required, please see the additional costs outlined in the proposal or request a revised proposal
- Bonding is not included in the base price
  - If required, please see the additional costs outlined in the proposal or request a revised proposal

SITE ACCESS AND CONDITIONS

- The installation proposal is based on driving tractor-trailers and cranes directly onto the site without obstruction
  - If there is not paved, unobstructed access to the site, installation costs may increase due to additional equipment needs, time, and labor required, which will be submitted to the Client via change orders
- The installation proposal is based on there being no fence and no overhead obstructions which would limit crane function
  - Any site obstructions requiring additional equipment needs, time, or labor, may increase installation costs which will be submitted to the Client via change orders
- The installation proposal is based on there being restrooms at the site within 100 yards that are available for use by SRI
  - If there are not, installation costs may increase which will be submitted to the Client via change orders
- The proposal is based on the Client providing all structural fill material required for the project delivered to the site, unless otherwise specified
- If the site proves unsuitable for regular slab-on-grade construction, the Client shall be responsible for any additional site preparation, engineering or construction costs, unless otherwise specified in the contract
- The Client is responsible for any and all issues associated with the existence of hazardous materials at the site, including but not limited to any mitigation required and any legal ramifications
- The proposal is based on the Client providing disposal services for construction debris, unless otherwise specified
- In the event that other entities affect the site conditions adversely or impede the progress of the skatepark installation, the Client shall be responsible for any additional costs
- The proposal is based on the Client providing all earthwork including grading, compaction, scarification, backfill, berming, and landscaping, unless otherwise specified
- Client shall provide site fencing and security for the duration of construction
  - Any costs associated with a breach in security (e.g. vandalism) shall be the responsibility of the Client
- Client shall provide a map showing roads and access routes marked in detail for the crane
- Client shall provide protection of underground utilities in the area of the site

PAYMENT TERMS

- SRI standard payment terms are 40% upon contract / purchase order, 40% upon shipment of elements, and 20% within 10 days of completion of the installation, unless otherwise specified
- Payments not made according to terms will be considered delinquent, and a service charge will accrue at the rate of 1.5% per month
  - In the event of litigation by SRI or by a licensed collection agency to recover money due for goods, products or services provided by SRI, or to recover SRI's property, Client shall be responsible for any agency and attorney fees incurred, including any fees to enforce or collect any judgment entered

PROJECT SCHEDULING

- The signed contract from SRI will include a date commitment to our Clients as to the shipping and installation schedule for the skatepark
- The proposal is based upon skatepark equipment shipping directly to the site to be immediately unloaded and installed by SRI factory installers
  - If other arrangements must be made, installation costs may increase due to additional equipment needs, time, and labor required, which will be submitted to the Client via change orders
- If the site is not ready for any reason when SRI is ready to ship the skatepark equipment, additional charges may accrue, including storage fees and additional handling fees
  - SRI may agree to store the equipment at its facility for up to 30 days, depending upon its other commitments
  - The payment schedule is still in effect as if the equipment was shipped according to the original date
  - If SRI is unable to store the elements, we will arrange shipping to a secure location of the Client's choice
  - Additional charges (including, but not limited to labor, equipment rental, travel, and transportation) will apply for SRI to unload the equipment at this storage location, re-load it onto other trucks when the site is ready, transport it to the site, and off-load it for installation
  - SRI is not responsible for theft or damage of any kind while the equipment is at this storage location
  - Under no circumstances shall the Client's staff or a third party handle the elements
- SRI is happy to accommodate rush orders for our Clients, if our production schedule permits
  - Scheduling details and rush charges will be discussed on a case-by-case basis with the Client
  - There will be a minimum rush charge of 10% of the total contract price to accelerate the schedule by 1-2 weeks
  - Some limitations will apply, such as minimum construction schedules, and our prior professional commitments
  - Minimum construction time is 4 weeks from the notice to proceed, with the average project taking ~12 weeks

LIMITATION OF LIABILITY

- Any liability of SRI which relates to the sale, manufacture, delivery, resale, installation or use of any goods sold by or furnished by SRI, whether arising out of contract, negligence, strict tort, under any warranty or otherwise, shall be limited to SRI's choice of the following: the repair of the goods; the replacement of the goods; the cancellation of the contract, return of the goods in question to SRI, and SRI's refund of the purchase price
- In no event shall SRI's liability exceed the price of the specific goods upon which the liability is based
- In addition, SRI shall not, under any circumstances, be responsible for special, consequential, or incidental damages such as, but not limited to, damage to or loss of other property; loss of profit, revenue or reputation; loss of capital; loss of purchased or replaced goods; or claims for delays, back charges, or loss of use
- These remedies are exclusive
- SRI reserves the right to makes any corrections as necessary to typographic errors

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE

REVISION

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — DAVID H. STRICKLER — Cert. No. 668 — LANDSCAPE ARCHITECT — 9/6/12

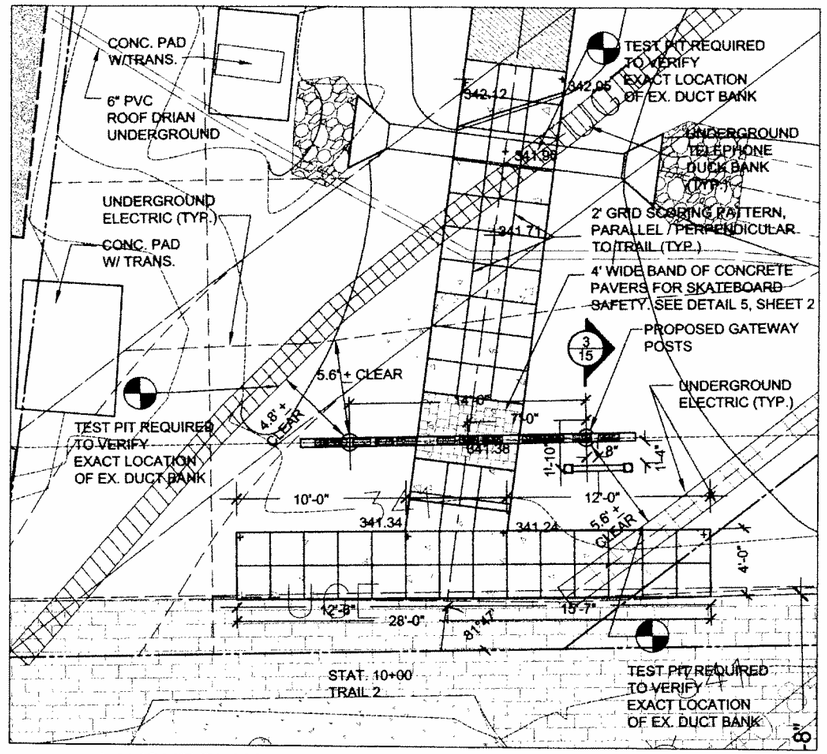
PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
SKATE AREA

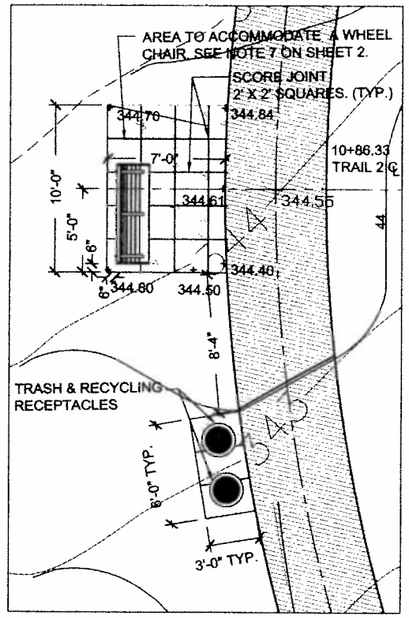
Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CITY PLAN # 20090407

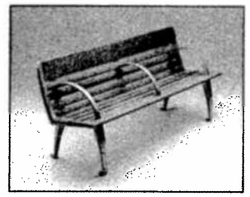
DESIGN PHR+A	SURVEY PHR+A
DRAWN SME	DATE JUNE 17, 2009
CHECKED DHS	SCALE AS SHOWN
SHEET C413-14 14 OF 21	FILE NO. 15907-1-0



1 LAYOUT PLAN
SCALE: 1/4" = 1'-0"

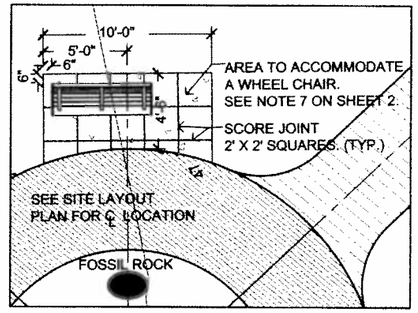


4A BENCH PLAN
SCALE: 1/4"=1'-0"



TRAIL BENCHES SHALL BE LANDSCAPEFORMS AUSTIN MODEL.
6' LENGTH, WITH CENTER ARM REST, WITH IPE HARDWOOD SLATS OR APPROVED EQUAL. FRAME POWDER-COAT FINISH COLOR SHALL BE SILVER OR APPROVED SUBSTITUTION. WWW.LANDSCAPEFORMS.COM

5 TRAIL BENCH DETAIL
SCALE: N/A



4B BENCH PLAN
SCALE: 1/4"=1'-0"

TRASH RECEPTACLES SHALL BE LANDSCAPEFORMS CHASE PARK MODEL, SIDE OPENING, SILVER POWDERCOAT FINISH, OR APPROVED EQUAL. MOUNTING OPTION: SURFACE MOUNT.

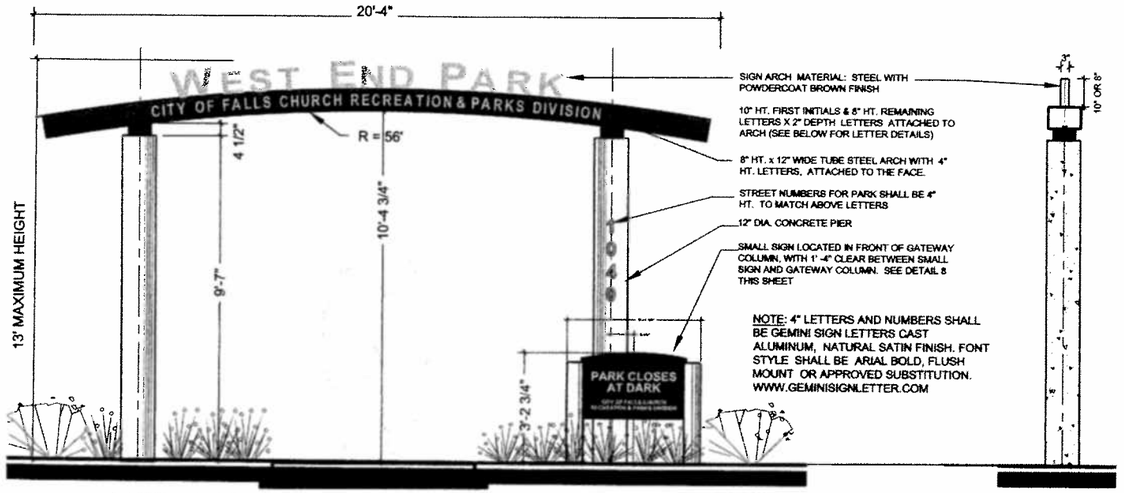
RECYCLING RECEPTACLES SHALL BE LANDSCAPEFORMS CHASE PARK MODEL, 10" TOP OPENING, SILVER POWDERCOAT FINISH, OR APPROVED EQUAL. MOUNTING OPTION: SURFACE MOUNT.

6 TRASH & RECYCLING RECEPTACLES
SCALE: 1/4"=1'-0"

GATEWAY AND EAST ENTRANCE SIGN DESIGN-BUILD NARRATIVE:

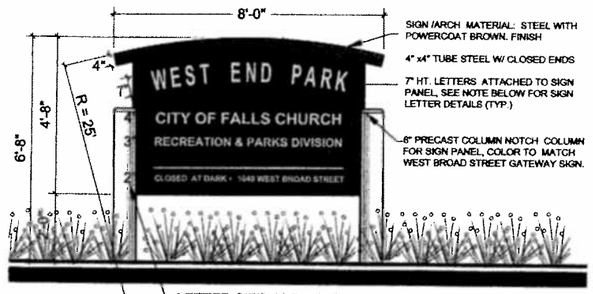
A DESIGN-BUILD CONSTRUCTION SCENARIO WILL BE USED FOR BOTH THE GATEWAY STRUCTURE AND SIGNAGE LOCATED AT THE WEST BROAD STREET ENTRANCE TO THE PARK AS WELL AS THE EAST SIGIN LOCATED AT THE W. & O. D. TRAIL ENTRANCE. THE DESIGN-DEVELOPMENT PLANS ARE PROVIDED HEREIN AND IDENTIFY SPECIFIC SITE CONSTRAINTS DUE TO EXISTING UTILITIES IN THE SURROUNDING THE STRUCTURE. ALL CLEARANCES SHOWN FROM THE UNDERGROUND UTILITIES AND THE STRUCTURE'S FOOTING ARE CONTINGENT UPON FINAL APPROVAL FROM THE UTILITY COMPANIES (DOMINION VIRGINIA POWER AND MCI). CONTRACTOR SHALL WORK WITH A SIGN DESIGNER AND STRUCTURAL ENGINEER TO PREPARE SHOP DRAWINGS THAT CONFORM TO THE DESIGN INTENT AS CLOSELY AS POSSIBLE; HOWEVER, RECOMMENDATIONS FOR MODIFICATIONS / IMPROVEMENTS WILL BE EVALUATED. A PRELIMINARY SOILS REPORT IS AVAILABLE FOR THE FOOTING DESIGN. THE CITY OF FALLS CHURCH AND THE LANDSCAPE ARCHITECT SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS PRIOR TO PERMIT SUBMISSION.

GATEWAY LARGE LETTERS SHALL BE GEMINI SIGN LETTERS, FABRICATED METAL LETTERS, 304 STAINLESS STEEL ALLOY, WITH A STAINLESS STEEL SATIN FINISH. FONT STYLE SHALL BE AERIAL BOLD. LETTERS TO INCLUDE AN ALUMINUM LEXAN BACK WITH A NATURAL SATIN FINISH. LETTERS SHALL BE BOTTOM MOUNT WITH TWO STUDS PER EACH STROKE OR APPROVED SUBSTITUTION.



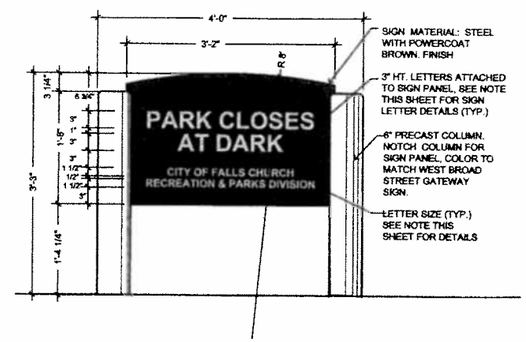
2 GATEWAY FRONT ELEVATION & SECTION
SCALE: 1/2" = 1'-0"

3 GATEWAY SECTION
SCALE: 1"=1'-0"



EAST ENTRANCE SIGN LETTERS AND NUMBERS SHALL BE GEMINI SIGN LETTERS CAST ALUMINUM, NATURAL SATIN FINISH. FONT STYLE SHALL BE AERIAL BOLD, FLUSH MOUNT OR APPROVED SUBSTITUTION. WWW.GEMINISIGNLETTER.COM

7 EAST ENTRANCE SIGN ELEVATION
SCALE: N/A



8 ELEVATION OF SMALL SIGN AT GATEWAY
SCALE: 1"=1'-0"

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPV'D	DATE

REVISION

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — DAVID H. STOGLER — Cert. No. 600 — 9/6/12 — LANDSCAPE ARCHITECT

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
GATEWAY AND SITE FURNISHINGS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CITY PLAN # 20090407

DESIGN	PHR+A	SURVEY	PHR+A
DRAWN	SME	DATE	JUNE 17, 2009
CHECKED	DHS	SCALE	AS SHOWN
SHEET	C415gate 15 OF 21	FILE NO.	15907-1-0

LEGEND

- LIMITS OF AREA TO BE SODDED
- EX. TREE TO BE PRESERVED
  (FOR GEMERAL MASSING IN RELATION TO PROPOSED LANDSCAPING. TREE DRIP LINES SHOWN WITHIN FORESTED AREAS ARE APPROXIMATE SINCE ACTUAL DRIP LINES ARE INDISTINGUISHABLE WITHIN THE OVERALL CANOPY.
  REFER TO SHEETS 9 THROUGH 12 FOR TREE PRESERVATION INVENTORY & NOTES. SEE TREE PRESERVATION PLAN FOR EXACT LOCATION AND PROTECTION METHODS)
- EX. TREE TO BE REMOVED
- EXISTING TREES OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN
- EXISTING SHRUBS OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN
- EXISTING GROUNDCOVER OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN

GRID NORTH

N 79°08'00" E 73.52'

S12°59'26"E 60.26'

N89°48'04" 140.10'

ChTh (3)
KaLa (2)
QuPh (2)
LiMa (22)
KaLa (3)
RhMa (2)
IlOp (4)
3 ThOc-N
1 MaVi
34 MuCa
29 HeSe-GS
18 GaBr
71 IrCr
36 LiMa
89 EpPe'F'
1 TiAm
78 EcPu
2 MaVi
9 AbGr
3 JuVi
53 AsTu
3 JuVi
35 AsTu
100 SeSp'F'
67 EpPe'F'
AREA TO BE SODDED
AsTu 26
EpPe'F' 27

LAWN
MULCH
FOSSIL ROCK
PROPOSED STONE DUST TRAIL
PROPOSED PICNIC TABLE
EX. GRILL
EX. TRASH RECEPTICLE
EX. STONE DUST TRAIL
PROP. TRASH RECEPTACLE
PROP. SKATE PARK BENCH
LAWN PLAY AREA
AREA TO BE SODDED
MATCH LINE

344 345 346 347 348 349 45 46 47 49

THIS SHEET TO BE USED FOR LANDSCAPING PURPOSES ONLY

CITY PLAN # 20090407

NO.	DESCRIPTION	DATE	REVIS'D	REVW'D	APRV'D	DATE
	REVISION					

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 609
LANDSCAPE ARCHITECT
9/6/09

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
LANDSCAPE PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
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DESIGN PHR+A	SURVEY PHR+A
DRAWN SME	DATE JUNE 17, 2009
CHECKED DHS	SCALE 1" = 8'
SHEET C416LND 16 OF 21	FILE NO. 15907-1-0

LEGEND

- LIMITS OF AREA TO BE SODDED
- EX. TREE TO BE PRESERVED
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- EXISTING GROUNDCOVER OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN

MATCH LINE

MATCH LINE

EXISTING BUILDING

PROP. BIKE BOLLARDS

PROP. BENCH

PROP. WASTE RECEPTACLES

MULCH BED AT EDGE OF SKATE SURFACE

PROPOSED SKATE FEATURE

AREA TO BE SODDED

TREE TO BE REMOVED

EX. OAK

LAWN

EDGE OF MULCHED PLANTING BED, TYP.

MOWED EDGE TO TRAIL

MAINTAIN 3' MIN. MOWED EDGE TO TRAIL

EXISTING ASPHALT TRAIL

BRICK CURBED PLANTER

THIS SHEET TO BE USED FOR LANDSCAPING PURPOSES ONLY

NO.	DESCRIPTION	DATE	REVS'D	REV'D	APR'D	DATE
	REVISION					

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STRIGLER
Cert. No. 600
LANDSCAPE ARCHITECT
9/6/12

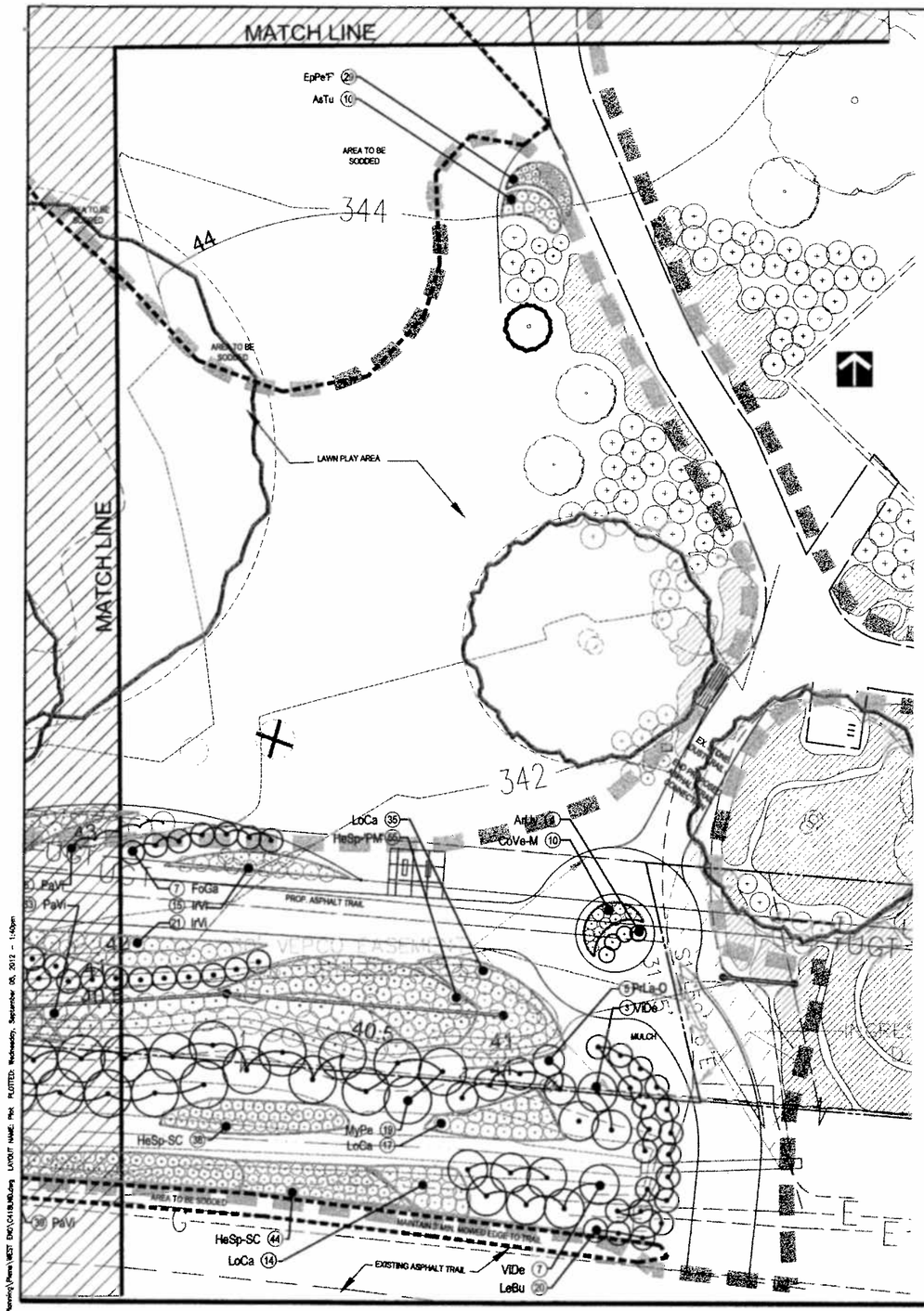
PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
LANDSCAPE PLAN

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CITY PLAN # 20090407

DESIGN: PHR+A	SURVEY: PHR+A
DRAWN: SME	DATE: JUNE 17, 2009
CHECKED: DHS	SCALE: 1" = 8'
SHEET: C417LND 17 OF 21	FILE NO.: 15907-1-0



LEGEND

LIMITS OF AREA TO BE SODDED

EX. TREE TO BE PRESERVED
(FOR GENERAL MASSING IN RELATION TO PROPOSED LANDSCAPING. TREE DRIP LINES SHOWN WITHIN FORESTED AREAS ARE APPROXIMATE SINCE ACTUAL DRIP LINES ARE INDISTINGUISHABLE WITHIN THE OVERALL CANOPY.

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EX. TREE TO BE REMOVED

EXISTING TREES OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN

EXISTING SHRUBS OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN

EXISTING GROUNDCOVER OUTSIDE OF LIMITS OF PROJECT AREA TO REMAIN

PLANT SCHEDULE

TREES							
AmLa	2	AmLa	2	Amelanchier laevis	Allegheny Servicaberry	2" caliper	B&B
ChTh	6	ChTh	6	Chamaecyparis thyoides	Atlantic Whitecedar	6'-7' height	B&B
IlOp	4	IlOp	4	Ilex opaca	American Holly	6'-7' height	B&B
IlxAtF'	5	IlxAtF'	5	Ilex x attenuata 'Fosteri'	Foster's holly	1" cal/6'_ht	B&B
JuVi	6	JuVi	6	Juniperus virginiana	Eastern Redcedar	6'-7' height	B&B
MaGr	1	MaGr	1	Magnolia grandiflora	Southern magnolia	2" caliper	B&B
MaVi	3	MaVi	3	Magnolia virginiana	Sweetbay Magnolia	2" caliper	B&B
QuFa	2	QuFa	2	Quercus falcata	Southern Red Oak	2.5"-3" caliper	B&B
QuPh	2	QuPh	2	Quercus phellos	Willow Oak	2.5"-3" caliper	B&B
ThOc-N	3	ThOc-N	3	Thuja occidentalis 'Nigra'	Dark Green American Arborvitae	6' height	B&B
TiAm	1	TiAm	1	Tilia americana	American Basswood	2.5"-3" caliper	B&B
SHRUBS							
AbGr	9	AbGr	9	Abelia x grandiflora	Glossy Abelia	18"-24" height	container
ArMe-M	14	ArMe-M	14	Aronia melanocarpa 'Morton'	Morton Chokeberry	18"-24" height	container
CoPe	32	CoPe	32	Comptonia peregrina	Sweetfern	2 gallon container	0
CoSe	65	CoSe	65	Cornus sericea	Redosier Dogwood	18"-24" height	container
FoGa	26	FoGa	26	FothergMa gardenii	Dwarf fothergilla	18"-24"	container
GaBr	68	GaBr	68	Gaylussacia brachycera	Box Huckleberry	15"-18" height	container
HaVi	11	HaVi	11	Hammamelis virginiana	Common Witchhazel	33"-48" ht.	container
IlVe	13	IlVe	13	Ilex verticillata	Common Winterberry	24"-36" ht.	container
KaAn	11	KaAn	11	Kalmia angustrifolia	Sheep Laurel	15"-18" height	container
KaLa	11	KaLa	11	Kalmia latifolia	Mountain Laurel	18"-24" height	container
LeFo	10	LeFo	10	Leucothoe fontanesiana	Drooping Leucothoe	15"-18" height	container
LiBe	3	LiBe	3	Lindera benzoin	Spicebush	18"-24"	container
MyPe	22	MyPe	22	Myrica pennsylvanica	Northern Bayberry	18"-24" height	container
PiFl	44	PiFl	44	Pieris floribunda	Mountain Pieris	15"-18" height	container
PrLa-O	5	PrLa-O	5	Prunus laurocerasus 'Otto Luyken'	Otto Luyken Laurel	18"-24" height	Container
RhMa	11	RhMa	11	Rhododendron maximum	Rosebay Rhododendron	18"-24" height	container
ViDe	14	ViDe	26	Viburnum dentatum	Arrowwood Viburnum	24"-36" ht.	container
	0						
	0	**GROUNDCOVER**					
ArUv	50	ArUv	50	Arctostaphylos uva-ursi	Common Bearberry	#1container	24" on center
EpPeF'	284	EpPeF'	284	Epimedium x perralchicum 'Frohnleiten'	Frohleiten Epimedium	#1_container	12"_on_center
GeSe-M	43	GeSe-M	43	Gelsmium sempervirens 'Margarita'	Margarita Carolina Jasmine	1 gallon	Container
IsFl	65	IsFl	65	Isotoma fluviatilis	Blue star creeper	#1_container	24"_on_center
LeBu	31	LeBu	31	Leiophyllum buxifolium	Box Sandmyrtle	2 gallon	container
		PERENNIALS					
AsTu	124	AsTu	124	Asclepias tuberosa	Butterflyweed	#1 container	15"-18" on center
CoVe-M	130	CoVe-M	130	Coreopsis verticillata 'Moonbeam'	Moonbeam Coreopsis	1 gallon	18" on center
DrLu	132	DrLu	132	Dryopteris ludoviciana	Marginal Wood Fern	3.5" containers	12"-15" spacing
EuPu	72	EuPu	72	Eupatorium purpureum	Sweet Joe Pye Weed	#1_container	24"_on_center
GaPu	87	GaPu	87	Gaillardia pucheta	Firewheel	#1 container	15" on center
HeSe-GS	58	HeSe-GS	58	Heuchera sanguinea 'Green Spice'	Green Spice Coral Bells	2 gallon	18" on center
HeSp-PM'	297	HeSp-PM'	297	Hemerocallis species 'Pardon Me'	Pardon Me Daylilly	1 gallon	18" on center
HeSp-SC	243	HeSp-SC	243	Hemerocallis species 'Strawberry Candy'	Strawberry Candy Daylilly	#SP4_container	18" on center
HoRS'	117	HoRS'	117	Hosta 'Royal Standard'	Royal Standard Hosta	#1 container	24" on center
IrCr	283	IrCr	283	Iris cristata	Dwarf Crested Iris	#SP5_container	8"-8" on center
IrVi	176	IrVi	176	Iris virginica	Virginia Iris	#1_container	24"_on_center
LiMa	115	LiMa	115	Lilium michauxii	Carolina Lily	1 gallon	24" spacing
LoCa	176	LoCa	176	Lobelia cardinalis	Cardinal flower	#1 container	18" spacing
SeSpF'	102	SeSpF'	102	Sedum spurium 'Fuldaglut'	Fuldiglut Stonecrop	#1 container	8" on center
SeTe-AJ	153	SeTe-AJ	153	Sedum telephium 'Autumn Joy'	Autumn Joy Sedum	1 gallon	18" on center
		GRASSES					
MuCa	208	MuCa	208	Muhlenbergia capillaris	Pink Hair Grass	1 gallon	container
PaVi	30	PaVi	136	Panicum virgatum	Switchgrass	3 gallon	container

THIS SHEET TO BE USED FOR LANDSCAPING PURPOSES ONLY

NO.	DESCRIPTION	DATE	REVIS'D	REVIS'D	APRV'D	DATE
	REVISION					

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLEIN
Cert. No. 000
4/6/11
LANDSCAPE ARCHITECT

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
LANDSCAPE PLAN AND PLANT SCHEDULE

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
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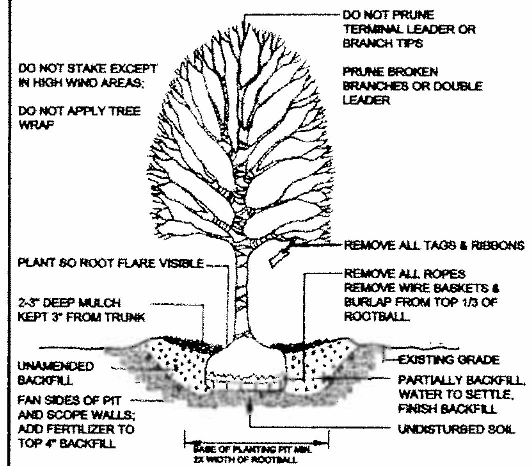
CITY PLAN # 20090407

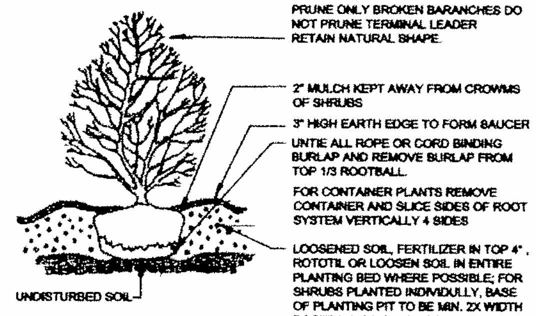
DESIGN	PHR+A	SURVEY	PHR+A
DRAWN	SME	DATE	JUNE 17, 2009
CHECKED	DHS	SCALE	1" = 8'
SHEET	C418LND 18 OF 21	FILE NO.	15907-1-0

FILE NAME: P:\PROJECT\15907\1-0\Planning\Plans\WEST END\C418LND.dwg LAYOUT NAME: PlotPLOTTED: Wednesday, September 05, 2012 - 1:40pm

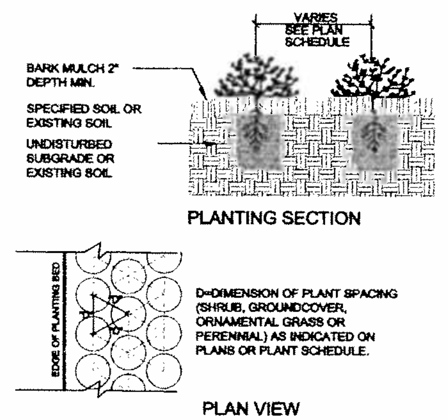
LANDSCAPE DETAILS



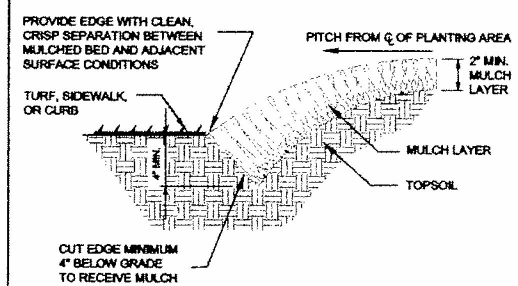
(A) TREE PLANTING DETAIL
NOT TO SCALE



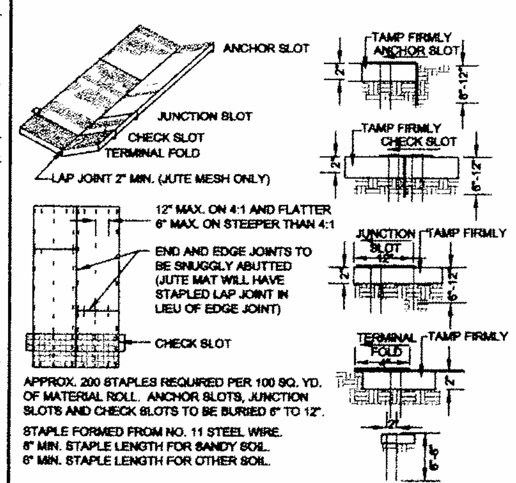
(B) SHRUB PLANTING DETAIL
NOT TO SCALE



(C) GROUNDCOVER, ORNAMENTAL GRASS OR PERENNIAL PLANTING DETAIL
NOT TO SCALE



(D) TYPICAL MULCH EDGING DETAIL
NOT TO SCALE



(E) SOIL STABILIZATION BLANKET INSTALLATION CRITERIA
NOT TO SCALE

(F) SOIL STABILIZATION BLANKET KEY MAP
INDICATES APPROXIMATE EXTENTS OF INSTALLATION OF SOIL STABILIZATION BLANKET, MAY VARY SLIGHTLY DEPENDING ON THE ROLL WIDTH OF THE PRODUCT SELECTED.

LANDSCAPE NOTES

SPECIFICATIONS FOR PLANTING
City of Falls Church, VA - Urban Forestry / Development Services

1. Contractor shall verify existing conditions and utility locations. The City Arborist prior to the planting must approve adjustments to locations of plant material due to field conditions. Any substitutions in plant material and sizes specified will not be accepted, unless approved by the City Arborist prior to installation.

2. All plant material shall conform the American Standard for Nursery, latest edition, published by the **American Nursery and Landscape Association.** All plants must be free from injury, insect infestations and disease. All plant material must be inspected by the City Arborist prior to planting. The Contractor shall phone at least three (3) days prior to installation for inspection of the material and for inspection of the planting operation.

3. All plant material must bear original nursery tags indicating the genus, species and if applicable, cultivars and variety.

4. Test soil drainage before planting. Dig a hole as deep as your planting hole and fill with water. If water drains at a rate les than one inch per hour, install drainage to carry water away from the planting hole base, or moving or raising the planting site (berm construction)

5. Examine soil for compaction before planting. If soils are compacted in an area where a group of plants are to be installed, incorporated several inches of a combination of organic materials such as composted yard waste, finely shredded pine bark mulch (*superfines*) or shredded, composted leaf mulch (*leaf-gro*) and till to a depth of twelve (12) to eighteen (18) inches over the entire area. Do not till if planting is within a tree preservation area. Apply the organic matter at a rate of one-quarter organic matter to three-quarters existing soil. Do not incorporate small quantities of sand - compaction will increase and drainage decreases. For single tree plantings, backfill planting holes with unamended soil. Increase the width of the top of the planting hole in area where soil has been compacted. Do not incorporate organic matter such as peat moss into backfill for individual planting holes.

6. Tree pits shall be a minimum of two (2) and a half (1/2) times the width of the root ball and no deeper than the height of the root ball. On balled and burlaped trees, remove pinning nails or rope lacing, then cut away the wrapping and then backfill. Remove the top 12" of the wire basket. Remove all rope, whether jute or nylon, from trunks. For container materials, remove the container completely. Select trees grown in containers with vertical ribs or a copper-treatment on the interior wall. These container modification and treatments minimize circling root formation. If roots are circling around the root ball exterior of container plants (trees, shrubs or perennials) cut through the roots and soil in a few places. Container tree with multiple circling roots will be rejected. Place shrubs and perennials at the same depth they were in the containers. For bare root perennials plant with the soil even with the top of the crown. Dig the hole wide enough to allow the roots to spread out in the soil. Push the soil back into the hole over the roots and around the top of the plant.

7. A soil test shall be made and the results submitted to the City Arborist prior to the installation of the plant material.

   For trees: A slow-release granular fertilizer shall be incorporated into the top four (4) inches of backfill soil to provide nitrogen, or if a soil test indicated a need for phosphorus or potassium. Use no more that 1 lb. Actual nitrogen per 1,000 ft. of planting hole surface. (Example - if using 18-6-12 with a 5' diameter hole, incorporate 0.3 oz. per planting hole.)

   For shrubs: A slow-release granular fertilizer shall be incorporated into the top four (4) inches of backfill soil to provide nitrogen, or if a soil test indicates a need for phosphorus or potassium. Use quantities in accordance with manufacturer's direction.

   For perennials, bulbs and annuals: A slow -release high phosphate fertilizer such as 7:40:6 or approved equal shall be incorporated into the top four (4) inches of the backfill mix. Alternatively, use Plant-tone on approved equal for sun perennials, together with rock phosphate at rates in accordance with manufacturers directions. Alternatively, for shade perennials use Hollytone or approved equal, together with super phosphate at a rate in accordance with manufacturers directions. Use gypsum, a soil conditioner, for clay soils. For bulbs commercial raw finely ground Bone Meal with an analysis of 4% nitrogen and
   %20 phosphorus acid shall be incorporated into the backfill mix.

8. When half of the backfill has been returned to the planting hole, water shall be applied to provide settlement and eliminate air pockets. The tree shall be thoroughly watered again after the remaining soil has been placed in the planting pit. A three (3) to four (4) inch dam of soil shall be constructed around the planting pit.

9. Two (2) to three (3) inched of mulch shall be placed over the tree-planting pit, but shall be kept three (3) to four (4) inches away from the trunk of the tree or crowns of shrubs. Do not allow mulch to touch the trunks of trees or crowns of shrubs. Use mulch that is compatible with the type of plant used. Avoid mulch that has not been nitrogen composted, as the pH of the soil could change as the mulch degrades. Pine bark mulch will not change the pH of the soil as it degrades. This is the best type of mulch for use with perennials. In mulching perennials, use no more than 1-2". For Mediterranean type of perennials, such as lavender, or for peonies or iris, use no mulch at all.

10. Trees shall be planted at the height of the surrounding grade with root flares visible. Should soil have been piled over the root flare during the digging process, this soil shall be removed so that the flare is slightly above grade.

11. Any pruning must be done with the approval of the City Arborist. Pruning at the time of planting shall be done only to remove broken branches or double (co dominant) leaders.

12. Remove tags and labels from trees and shrubs to prevent girdling branches and trunks.

13. Stakes shall be used only in area of high traffic or highly windy locations. A tree-staking diagram should be provided if staking is necessary. Stake for maximum of one year. Allow trees a slight amount of flex rather than holding them rigidly in place. Use guying or attaching that won't damage the bark. To prevent trunk girdling, remove all guying material after one year.

14. Use tree wrap only on thin barked trees planted in spring or summer into hot or paved areas. In these instances use white wrap, attaching with out the use of wire, rope, ties or tape, and remove after one year.

15. **Planting Season** - Planting shall be done only within the following dates:

    a. Deciduous Trees - March 15 to May 30 or September 15 to December 15 (oaks and black gum to be spring dug and planted only).
    b. Evergreen Trees - March 1 to May 15 or September 15 to November 15.

16. All plant material shall be guaranteed by the Contractor for one year from the date of acceptance to be in good, healthy and flourishing condition. In the event that a plant dies or in the judgment of the City Arborist, fails to flourish; the Contractor shall replace in accordance with the above noted specifications.

17. The Contractor shall be responsible for the maintenance of the plants during this one-year warranty period. This maintenance shall include providing water on a weekly basis when natural rainfall is less than one inch a week. Drip irrigation systems and water reservoir devices can facilitate watering. Root balls of trees should be slowly and thoroughly soaked at time of watering. For planting beds (i.e., trees, shrubs and perennials), water slowly and deeply putting down 1"-2" of water in a 6-12 hour period. This should give a penetration of 12-18" depth.

SPECIFICATIONS for LANDSCAPE MANAGEMENT and INTEGRATED PEST MANAGEMENT (IPM) of Publicly Owned Properties in the CITY OF FALLS CHURCH, VA

1.0 GENERAL CONDITIONS

1.1 Scope of Work

A. The landscape contractor shall provide all materials, labor, and equipment required to complete all landscape maintenance work as outlined in these SPECIFICTIONS for a one year period.

A. The landscape contractor shall be familiar with the project premises and how the existing conditions will effect his/her work.

1.2 Personnel

The contractor's professionally maintained personnel shall, at all times, present a neat appearance, and all work shall be performed and complaints handled with due regard to the City public relations. The City and the contractor will each be promptly notified by the other of any complaints received from City employees, City residents or City property owners. The contractor shall utilize competent employees in performing the work specified in this Agreement. At the request of the City's Recreation and Parks Division, the contractor will replace any incompetent, unfaithful, abusive or disorderly person in his or her employ.

The contractor is required and hereby agrees by accepting this contract, to pay all employees not less than the Federal Minimum Wage and to abide by other requirements as established by the Congress of the United States in the Fair Labor Standards Act, as amended, and changed from time to time.

The contractor shall provide a statement that their firm is an Equal Opportunity employer.

Trained personnel using current, acceptable horticultural practices shall perform all landscape maintenance. **The qualifications of personnel serving as foreman, pesticide applicator and IPM scout must be submitted along with the bid package.** The qualifications of these key personnel will be a factor in the award of this contract. **The foreman must remain on site all times when the crew is working. The foreman must be fluent in the English language.**

1.3 Standards

A. All operators of power equipment shall conform with OSHA regulations.

A. All work shall be performed in a manner, which maintains the original integrity of the landscape design.

A. All chemical applications shall be performed in accordance with current county, state, and federal laws, utilizing EPA registered materials and methods of application. These applications shall be performed under the supervision of a Licensed Certified applicator. Selection of chemicals shall be in accordance with the current Virginia Cooperative Extension Service Bulletins. The contractor shall specify to the City what chemicals are being used at individual sites and be prepared to present information regarding the chemicals, if requested by the City.

A. All areas noted "Organic Gardening (OG)" on the List of Sites attached (see Appendix) shall receive neither synthetic chemical pesticides nor synthetic fertilizers.

A. All areas noted "IPM" (Integrated Pest Management) on the List of Sites attached (see Appendix) shall have regular monitoring and tracking of pest populations as a central part of this program. Alternative methods to broad spectrum pesticide applications such as biological releases or selection of pest resistant plant material will be used where practical. Selective biorational and botanical insecticides will be used in controlling pest populations when possible.

1.4 Workmanship

A. During landscape maintenance operations, all areas shall be kept neat and clean. Precautions shall be taken to avoid damage to existing structures, public or personal property. All work shall be performed in a safe manner to the operators, the occupants and any pedestrians.

A. All fertilizers remaining on paved surfaces must be removed at the end of each day. Neither compost nor mulch shall be piled near storm drains. When compost must be temporarily stored in piles, straw bales shall be used to prevent leakage of materials.

A. Upon completion of maintenance operations, all debris and waste material shall be cleaned up and removed from the site, unless provisions have been granted by the City for disposal or storage of materials.

A. Any damage to the landscape, the structure, the irrigation and/or electrical systems caused by the landscape contractor shall be repaired by the landscape contractor with out charge to the City.

1.5 Warranty

The landscape contractor shall make every effort to maintain the health and growth of all plant material. The contractor shall not be responsible to guarantee the plant material, except when the contractor has obviously been negligent in the performance of his/her work as outlined in these SPECIFICATIONS and caused harm to plant material, irrigation systems, etc. The contractor will be held responsible for the repair or replacement of damaged City property. Plant material or irrigation systems parts which are damaged to the extent that they must be replaced, as determined by staff of the Recreation and Parks Division, shall be replaced within fourteen (14) calendar days under the City's supervision. In the event plant material is damaged outside the appropriate planting season for a particular plant or plants, that (those) plant(s) shall be replaced at the beginning of the next planting season. The contractor shall provide the irrigation necessary for the establishment of the newly planted replacement materials.

1.6 Schedule

The landscape work performed by the contractor as described in this Agreement shall begin at the City's request. Each area awarded, once begun, shall be for a continuous period through February 28, 2002, subject to the provisions of this Agreement.

1.7 Hours of Work

The contractor may perform the work on weekdays (Monday through Friday between the hours of 7:30 a.m. and 4:00 p.m. Special permission must be given, in advance, by the designated contact staff of Recreation and Parks to allow work to be performed on the weekends (Saturday and Sunday). In the event that work is performed on weekends the hours of operation shall be 9:30 a.m. to 5:00 p.m.

1.8 Equipment

The contractor is responsible for providing, maintaining and transporting all necessary equipment, and fuel for its use, in connection with the program of landscape maintenance described in this Agreement. The contractor shall provide all tools and supplies necessary for performing the work required by this Agreement. **No vehicular equipment (cars, trucks, etc.) is allowed off of paved surfaces on City properties.**

1.9 Communication with City Staff

The contractor shall be responsible for contacting the designated Recreation and Parks staff person each Monday morning with a schedule for that week's proposed work plan. Adjustments to that schedule, due to weather or other problems are to be made by phone or fax. Each day that the contractor is working in the City, the foreman for the crew shall contact the designated staff person with the proposed locations for that day's work.

A list of work completed each day (to include work location and work performed) shall be provided to the designated Recreation and Parks staff person at the end of each week.

Copies of IPM scouting reports and recommended treatments shall be submitted as required to the designated Recreation and Parks staff person.

2.0 Products

A. Compost. Compost shall be 'Leaf-Gro' or approved equal. Compost must be of a maturity and quality suitable for top-dressing soils in ornamental landscaped areas. He pH must be within limits of plant tolerance when utilized as a top dressing. No particle shall exceed on-half (1/2") diameter and no more than one percent (1%) shall be man-made materials.

A. Mulch shall be 'Virginia Fines' or approved equal pine bark mulch. No particle shall be larger than 1" diameter. The use of mulch shall be limited to 2" in depth and applied only as the existing mulch is cultivated into the soil or is removed.

C. Pesticides, fertilizers lime, etc. used in landscape maintenance shall be selected based on the most current information provided by the University of Maryland or Virginia Polytechnical Institute (VPI) and currently labeled by the EPA for its proposed use.

3.0 Maintenance of Landscaped Beds - Trees, shrubs, perennials and other groundcovers

3.1 Soil Tests

A. In early spring, soil tests shall be performed for each location designated for soil testing on the List of Sites for Annual Soil Testing (see Appendix 3). The tests shall determine soil texture, pH, total calcium, magnesium phosphorous, potassium, soluble salts and percent organic matter. Each sample to be submitted for testing shall be extracted from a composite sample representing a minimum five core samples for each soil area. Samples shall be taken from a defined growing area with plants of similar growth habits, such as trees, shrubs, herbaceous plants, and turf. This procedure should be performed for each distinctively different growing area in the managed landscape. Soil tests shall be conducted by the State agricultural soil testing laboratory or by a commercial agricultural laboratory.

Additional soil tests may be required to diagnose failing plant material.

All soil testing costs shall be borne by the contractor. The results of the soil tests, together with the recommendations for corrections of deficiencies, shall be submitted to the City.

B. Each soil test shall examine the following chemical and physical attributes. Any soil that falls within the indicated range of results shall be considered acceptable. Soil that falls outside of any of the indicated ranges may be amended, retested and resubmitted for approval by the City.

pH Range	4.5 - 7.0
Organic Matter	greater than 1.5%
Calcium	less than 175 units or 3,000 lbs./A.
Magnesium	26-50 units or 71-124 lbs./A
Phosphorus	26-50 units or 62-102 lbs./A
Potassium	26-50 units or 85-160 lbs./A.
Electrical conductivity	600 ppm or .4 mmhos/cm (.4 dS)

A. The purpose of fertilization and soil textural amendment is to prevent or correct nutrient deficiencies to improve tree, shrub and herbaceous plant material health. Specified areas shall be soil sampled and fertilized according to testing results.

A. In the event that the soil test indicates the pH is beyond the acceptable range, use the methods indicated in Appendix 4 (see attached) to raise or lower the pH.

3.2 Spring Clean-Up

(To begin no later than March 1 and be completed not later than April 1). Plant beds shall receive a general clean up before composting and mulching. Clean up includes:

A. Removal of leaves, trash, weeds and other debris.

A. Cutting back of herbaceous perennials left standing through winter, e.g. ornamental grasses, flowering perennials, etc.

A. Thoroughly removing all weeds.

D. Turning of existing mulch, removal of excessive mulch build-up in beds, and top dressing with compost specified under 2.0 (A) above, at the depth of one half (1/2) inch to one (1) inch over perennial beds and one (1) inch over the roots of trees and shrubs.

A. Where allowed (see Appendix for areas not designated "OG"), an application of a pre-emergent herbicide may be made if deemed necessary to help prevent weeds. Any herbicide selected for a given area must be tolerated by the materials in that bed and be applied in accordance with the manufacturers directions.

A. Edging of all beds at right angles to a depth of 2-3 inches except in the vicinity tree roots or of young trees. SPECIAL CARE shall be taken to not damage the roots of existing trees or to inhibit the spread of roots of newly established trees.

A. Application of pine bark mulch as specified under 2.0 (B) above to a depth of one (1) inch over perennials and other ground covers and two (2) inches over the roots of shrubs and trees. SPECIAL CARE shall be taken in the mulching operation not to over mulch or cover the bases of trees or crowns of shrubs. All mulch shall be kept 2-3 inches away from the trunks of trees.

3.3 Maintenance of Flowering Bulbs

A. After flowering, cut off spent flower heads.

A. Allow leaves of daffodils and hyacinths to remain for a minimum of six (6) weeks after flowers have faded. Cut off at base.

A. Allow leaves of other bulbs to yellow naturally and then cut off at the base.

3.4 Perennials

A. Cut all deciduous perennials flush to the ground during the spring clean-up up.

A. After blooming, cut only the flowering stems. DO NOT REMOVE THE FOLIAGE.

C. The following fall, cut back deteriorating plant parts, allowing sturdy, fall-standing perennials to remain for winter interest.

A. If soil is bared in fall, following leaf removal, add mulch to 1" depth to perennial beds.

3.5 Ongoing Weed Control

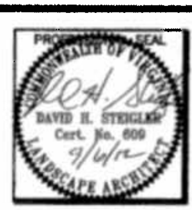
A. All beds shall be weeded on a continual basis throughout the growing season to maintain a neat appearance at all times.

A. Pre-emergent and post-emergent (foliar applied) herbicides shall be used where and when applicable and in accordance with the product's label. Herbicides shall not be used in areas designated "OG" on the List of Sites (see Appendix).

A. Hand weeding shall also be performed as needed to keep all locations neat and free of weeds.

THIS SHEET FOR LANDSCAPE PLAN ONLY

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPR'D	DATE
REVISION						



PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
LANDSCAPE NOTES AND DETAILS

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Engineers. Surveyors. Planners. Landscape Architects.
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CITY PLAN # 20090407

DESIGN PHR+A	SURVEY PHR+A
DRAWN SME	DATE JUNE 17, 2009
CHECKED DHS	SCALE AS SHOWN
SHEET C419LND-DET 19 OF 21	FILE NO. 15907-1-0

FILE NAME: P:\PROJECT\15907\1-0\Planning\Plans\WEST END\C419-20LND-DET.dwg LAYOUT NAME: DET PLOTTED: Wednesday, September 05, 2012 - 1:41pm

LANDSCAPE NOTES

3.6 Insect and Disease Control: Integrated Pest Management (IPM) of Trees, Shrubs and Ground Covers

A. Trained personnel under employment of the contractor shall be responsible for monitoring the designated sites (see List of Sites in the appendix), twice a month from May through August plus once in late winter or early spring and once in the fall. The fall inspection should include observations for large populations of overwintering stages, such as bagworms and spider mite eggs. The late winter visit is for observation of scale insect infestations. The monitor should also note the presence of beneficial insects on each visit. The contractor will furnish a report to the City following each monitoring session. For purposes of continuity, one person shall serve as the monitoring "scout" for the entire season.

B. The landscape contractor shall be responsible for creating and maintaining site maps and site evaluation guides.

C. The landscape contractor will be responsible for performing soil tests as needed to identify nutrient imbalance for deficiencies causing plant material decline.

A. The major items that shall be accounted for in each monitoring visit shall include:

1) date
2) location of site
3) time in and time out of site
4) major problems and presence of beneficial insects observed and location on location map
5) method of quantification for particular pest encountered. For insects on small trees, number per 25 leaves/needles, or number per 25 shoots/branches, should be counted. For leaf spotting diseases, number of spots per 25 leaves should be counted. For bark infesting insects, the number per branch, number of branches infested or extent of trunk colonization should be determined.

For pests specific to Falls Church, the following are threshold indicators of population buildup that require the contractor to immediately provide the City recommendations for control:

- Aphids: five of each on five leaves or plant deforming
- Whiteflies: leaves or plant deforming
- Scales: -all foliar; two per square inch
  -all trunk; five per square inch
  -Calico scale: if three out of five trees of a species are infested at a density of two per square inch
- Mites: -vegetation is off-color
  -webs are observed
  -three nymphal skins occur per square inch
- Adelgids: as with calico scale
- Borers: top kill; bore grass
- Ants: presence
- Black Vine: ten or more per plant on new Weevils growth
- Beetles: three of five leaves examined are skeletonized
- Caterpillars: three of five leaves examined are chewed
- Leaf Spotters: five lesions per leaf; one lesion on a petiole
- Fire Blight: active croziers (shepherd's bacterium crook) or trunk ooze.

1) control decisions
2) control techniques used
3) evaluations of previous control activities

A. Pest Controls

Recommendations for biological controls or cultural adaptations shall be provided to the City along with options for chemical treatments, as necessary. When beneficial organisms are present but chemical treatments must be used, materials that will least affect the beneficials shall be used; that is, Bt, horticultural spray oil, and safer insecticidal soap as appropriate and at the optimal time for the particular material. Systematic chemicals shall be used only as a second choice. Sevin shall never be used to control aphids or spider mites. In all cases, when chemical pesticides must be used, they shall only be spot sprayed. The use of all controls must be approved by the City prior to treatment.

Plant pathogenic disease problems that can be resolved by pruning or removal of damaged plant parts will be performed as part of the contract, but only with approval and supervision of the designated Recreation and Parks staff person.

Applications of pesticides, horticultural oils, fungicidal soaps, etc. (any materials other than pre-emergent and post emergent herbicides used in routine weed control) shall be made at an additional cost to the City. These additional applications must be pre-approved by the City. Spray operations will cover all material up to a height of twenty-five feet (25'). Trees exceeding this height will be serviced under a separate contract.

Control of diseases and insects shall be performed at an additional cost to the City.

3.7 Trash removal

The landscape contractor shall remove trash from all shrub and groundcover beds with each visit.

3.8 Leaf removal from planting beds

All fallen leaves shall be removed from the beds and hauled from the sites twice in November and once in December. Leaves removed from the sites will be disposed of at the nearest City street curb. (Leaf removal from turf areas is specified under Section 4.0, below). These curb-side leaf piles shall be arranged in a manner that do not impede vehicular or pedestrian traffic.

3.9 Winter Clean-Up

The project areas shall receive a general clean-up once during each of the winter months, i.e., December, January and February. Clean-up includes:

A. Cleaning leaves and debris from curbs and parking areas.
B. Removing all trash and unwanted debris.
C. Inspection of grounds and reporting any problems to the City/repair of winter snow removal damage of items maintained.

NOTE: Tree/Shrub Pruning Excluded

Unless otherwise directed, pruning of all trees and shrubs will be performed by City crews or others under a separate contract with the City.

4.0 Leaf Collection

In the fall, the contractor will be responsible for two (2) leaf collections at specified locations in the City. These locations are noted in the Appendix. The leaf collection will consist of raking or blowing all of the leaves to designated locations for pick up by the Environmental Services Department. The leaf removal operations shall take place between mid-November and mid-December. No leaves shall be removed from wooded areas or bare areas under trees. Staff of Recreation and Parks will specify these "no leaf removal" areas. CAUTION must be taken to not blow leaves into vehicles in parking areas.

5.0 Miscellaneous Requirements

The Contractor shall secure all permits and licenses imposed by law and ordinance, pay all charges and fees, and give all notices necessary and incidental to the due and lawful protection of the work regarding the obstruction of streets and driveways, maintaining signals and open passageways, and protecting the same where exposed. The Contractor will comply with all applicable Federal, State and Municipal laws, ordinances and regulations.

5.2 Payments to Other Parties

The Contractor shall not obligate the City to make any payments to another party, nor make any promises or representations to another party for, or in the behalf of, the City without prior written approval of the City Manager or his authorized representative. No work shall be done on any grass or brush involved in such payments, promises or representations until such approval of the City Manager or his authorized representative has been obtained.

5.3 Specifications and Bid Proposal

The specifications and bid proposal submitted by the Contractor shall be incorporated herein and are to be construed as part of this Agreement.

5.4 Supervision, Consultation and Reporting

It is agreed that the Contractor must understand work priorities, maintenance methods and management techniques. Upon request and/or necessity, an authorized City representative will accompany the Contractor to work areas to further clarify or describe maintenance methods and procedures. All work described in this Agreement shall be performed under the guidance of the Director of Recreation and Parks or his authorized representative and subject to his approval. The Contractor will consult with the City's representative regarding the details, scheduling and performance of the landscape maintenance work and will provide weekly reports of work performed. (See section 1.9)

5.5 Obstruction of Streets and Rights-Of-Way

The Contractor will arrange to keep sidewalks open for traffic whenever possible and will block portions of streets only when deemed necessary to protect private property. Subject to prior approval by the Public Works Division, warning signs and barricades shall be furnished and erected by the Contractor when warranted. It is the Contractor's responsibility to remove all surplus material and debris from streets as work progresses in order that the public will have adequate use of the affected streets.

5.6 Accident Prevention

The Contractor shall exercise precaution at all times for the protection of persons and property. Safety provisions of all applicable laws and ordinances shall be strictly observed. The Director of Recreation and Parks or his authorized representative may require the Contractor to discontinue hazardous work practices upon written notice. It is required that the Contractor keep the necessary guards and protective devices at locations where work is being performed to prevent injury to the public or damage to public or private property.

5.7 Payment for Services

In return for work performed by the Contractor, the City agrees to pay the Contractor monthly from March through February 28, 2002, as listed in the Appendix. The monthly bill will be a set amount based on the total price divided by the number of months of the contract. The first bill will be for March.

The Contractor will submit monthly invoices and shall be paid according to the following:
The City shall check the sites to be maintained to ascertain whether the work was completed within the time schedule specified for each site. City records will be compared against the invoice from the vendor before payment is made. Payment will be made following receipt of the invoice for the previous month in which the Contractor completed the landscape maintenance and integrated pest management work. The City retains the right to alter areas serviced.

5.8 Insurance

The Contractor agrees to furnish and maintain during the period of this Agreement, at its own cost, policies of insurance as follows:

A. Covering the legal liability of the Contractor, and/or its subcontractors who may be engaged in the work, to pay claims for personal injuries to the Contractor's employees and for the death resulting therefrom under applicable Workman's Compensation Law.
B. Covering the legal liability of the Contractor to pay claims or damages for personal injuries (including death) on account of accidents to persons other than employees of the Contractor, and to pay claims for property damages arising from operations under this agreement.
C. The Contractor shall provide the City with a certificate issued by the insurance carrier or broker which evidences the coverage described above to the satisfaction of the City.
D. The Contractor and all employees or agents of the Contractor assume all risk and danger incidental to the Contractor's obligations and operations provided in this Agreement. The Contractor agrees that neither the City nor any of its officials, employees, agents or representatives shall be liable for injuries (including death) arising out of the Contractor's obligations and operations provided in this Agreement. The Contractor and all employees or agents of the Contractor do hereby forever release, remiss and discharge the City of and from any and all manner of actions, causes of action, claims and demands whosoever and howsoever occurring for reasons of injuries (including death) to person or property, arising out of the Contractor's obligations and operations provided in this Agreement.

5.9 Liquidated Damages

If the Contractor fails to perform the work in the manner specified by this Agreement, the City may, at its option, assess the Contractor for each day that the work is not performed. Before assessing liquidated damages, the City will notify the Contractor of the problem and allow the Contractor twenty-four (24) hours to take corrective action. The assessment will be fifty dollars ($50.00) per day. If, after further written notice, the Contractor fails to take corrective action the City may terminate this Agreement and enter into an agreement with another contractor, or perform the work itself. The cost of performing the work will be deducted from any amount due under the Payment for Services schedule.

6.0 City Funding Provision

The funding necessary to discharge the ongoing financial obligation of the City under this Agreement shall be limited to each individual month, subject to the City Council approved budget appropriation. This Agreement does not obligate the taxing power or the full faith and credit of the City. In the event the City Council does not appropriate the funding necessary to fund this Agreement in any future fiscal year budget, the financial obligation of the City shall cease at the end of the last fiscal year budgeted appropriation.

6.1 Term of Agreement
This Agreement represents the entire Agreement between the City and the Contractor, and is entered into on the ________ day of ______________, 2001. This Agreement shall become effective ____________________ and shall remain in effect up to and including midnight, February 28, 2002. The City, at its option, may extend the term of this agreement for an additional period of three (3) one year terms.

6.2 Right to Cancel

The City reserves the right to cancel any part of this contract.

The Contractor will post a Bid Bond of five percent (5%) of the bid price and a Performance Bond of one hundred percent (100%).

CONTRACTOR　　　　CITY OF FALLS CHURCH, VA

Name:______________________ By:______________________

By:______________________ Attest:______________________

Address:______________________

____

____

Telephone:______________________

Attest:______________________

REFERENCES

References For:

Bidders shall provide references on this form.

1. Business Name:______________________
   Contact:______________________
   Title:______________________
   Mailing Address:______________________
   ____
   Phone:______________________
2. Business Name:______________________
   Contact:______________________
   Title:______________________
   Mailing Address:______________________
   ____
   Phone:______________________
3. Business Name:______________________
   Contact:______________________
   Title:______________________
   Mailing Address:______________________
   ____
   Phone:______________________

HOURLY RATES OF MANPOWER & EQUIPMENT
Personnel/Equipment Hourly Rates for Work Beyond Contract

Landscape Foreman ________/hr
IPM Scout ________/hr
Spray Rig & Operator ________/hr
Hand Spray & Operator ________/hr
Landscape Worker ________/hr
Laborer (weeding & pick-up of debris & litter) ________/hr
Operator with tractor & sprayer tank (liquid turf treatment) or granular spreader for fertilization, application of pesticides, etc.) ________/hr

APPENDIX 1

List of Sites Landscape Maintenance

North Side

IPM	Community Center (223 Little Falls Street)
IPM	City Hall (300 Park Avenue)
IPM	City Hall Parking Lot Islands
IPM	Cherry Hill Park Grounds
OG/IPM	Cherry Hill House (312 Park Avenue)
OG/IPM	Old Fashioned Garden
IPM	Senior Center (401 Great Falls Street)
OG/IPM	Library (120 North Virginia Avenue)
IPM	Garden Court (mini-park)
IPM	North Maple Avenue between Park Ave. & W. Broad St.
IPM	Mini Park on West Broad Street (between 100 & 200 blocks)
IPM	E. & W. Broad Street Streetscape corridors
	Park Place Parking Lot (behind Mountain Jacks)
IPM	North Washington Street Medians and Streetscape planters
OG/IPM	Miller House (366 North Washington Street)
OG/IPM	Pendelton House (114 East Columbia Street)
IPM	Madison Park
OG/IPM	Ives House (209 East Broad Street)
OG/IPM	Child Development Center (111 North Cherry Street)
IPM	Frady Park
	Buxton Road and Tyson Drive Island
	East Broad Street at Buxton Road
IPM	Ft. Taylor at Roosevelt St. & E. Broad St.
IPM	Roosevelt Boulevard and Roosevelt Street Island
IPM	Crossman Park at Four Mile Run
OG/IPM	Crossman Park connector Trail (entrance on E. Jefferson St.)
IPM	Fire Department Property (N. Washington St. to Little Falls St.)
	Trolley Car Park
IPM	Mt. Daniel Elementary School
IPM	Lincoln Park
OG/IPM	West End Park
IPM	George Mason High School/Middle School

South Side

IPM	Broad Street Streetscape Planters (both sides of street) from Haycock Road to Fairfax Street
	City Property Yard (Gordon Road)
	Roberts Park
OG/IPM	Madison Lane median
IPM	Thomas Jefferson Elementary School
	Rollins Street right-of-way on slope (north side of street)
	Annandale Road and Gundry Drive Island
IPM	Big Chimney Park
IPM	Mini Park at South Washington Street and Annandale Road
IPM	South Washington St. medians
IPM	Hillwood Ave. & South Washington Street Islands
IPM	Tower Square Islands
IPM	Cavalier Trail Park
OG/IPM	Aurora House (420 South Maple Avenue)
	Jackson St. at S. Washington St. slope
IPM	Post Office

OG = Organic gardening - no chemical fertilizers or pesticides
IPM = Integrated Pest Management

TOTAL COST TO CITY PER MONTH (Sections 1.0-3.9 and 5.0-5.9)

$______________

APPENDIX 2

Raking and Removal of Leaves
Cost Per One Time (Section 4.0)

1.	Lincoln Park	$__________
2.	Cherry Hill Park & Library	$__________
3.	Berman Park	$__________
4.	Don Frady Park	$__________
5.	West End Park	$__________
6.	Big Chimneys Park	$__________
7.	George Mason M/H School	$__________
8.	Mt. Daniel Elementary	$__________
9.	T.J. Elementary	$__________
10.	Streetscape Corridors on West & East Broad St.	$__________
11.	420 S. Maple St. (Aurora House)	$__________
10.	Miller House (366 N. Washington St.)	$__________
13.	Ives House (209 E. Broad St)	$__________
14.	Pendelton House (114 E. Columbia St.)	$__________
	TOTAL per removal (one time)	$__________

______________ Signature　______________ Company Name　______________ Date

______________ Typed Signature & Title　______________ Address　______________ Phone

APPENDIX 3

List of Sites for Annual Soil Testing

1. Broad Street Streetscape Corridors (select five (5) locations)
2. West End Park
3. Cavalier Trail Park (beds south side of stream)
4. Falls Church Library
5. City Hall (East Wing area)
6. Community Center - Veteran's Memorial
7. Aurora House
8. Old Fashioned Garden at Cherry Hill Park
9. Fire Department Property
10. Community Center - new beds at side and rear
11. North Washington St. median (between Columbia St. & Jefferson St.)

NOTE TO PERSON PREPARING SPECIFICATIONS: SHEET ON INCREASING AND DECREASING IS NOT IN THIS FILE AND MUST BE MANNUALLY ADDED TO SPEC PACKAGE !

7.0 Turf - Mowing, edging, trimming and other treatments

The contractor shall mow, trim, edge, rake and sweep the turf grass in certain specified areas in the manner specified in this section. The specific areas are listed in the Appendix, which is incorporated herein and shall be construed as part of this Agreement. Each area designated is to be completed before going to the next one. The City may add or drop areas and regulate the number of mowings during the contract period

7.1 Litter and Debris

Prior to each mowing, all trash, sticks and other unwanted debris shall be removed from all areas to be mowed. The contractor shall be responsible for disposal of collected litter and debris. When finished mowing, the contractor shall sweep and remove any dirt and grass clippings from curbs, sidewalks or streets adjoining the areas.

7.2 Mowing

Cool season grasses, including blue grass, tall fescue, perennial ryegrass, etc., shall be maintained at a height of 2 ½" to 3 ½" in spring and fall. From June through September, mowing height shall be maintained at no less than 3". To insure a high quality cut, all mower blades shall be sharpened no less than once a week during the mowing season.

During the mowing season, all lawn areas shall be mowed every 5 to 10 days (unless otherwise noted on the List of Mowing/Trimming Locations, attached), or as weather conditions dictate. This is best determined by blade growth, since only 1/3 of the blade should be removed at any one cutting. Caution shall be used to avoid any flying debris. The contractor shall be responsible for damage done to public or personal property as a result of debris thrown by mowers. Safety glasses and ear protection shall be worn during this operation.

Mulching mowers shall be used. Leave the grass clippings unless the clippings are too long, in which case remove excess grass.

4.2 Trimming

The mowing operation includes trimming around all obstacles, removing excess grass clippings and removing debris from walks, curbs and parking areas. The "obstacles" shall include curbs, trees, bushes, planting beds, utility poles, sign posts, fire hydrants, utility boxes and other objects as required to provide a uniform appearance. The trimming must be done on the same day as the mowing. Trimming around trees shall require hand trimming or using shields (such as flexible plastic piping) to prevent damage to tree bark from weed eaters. Weed eaters shall NOT come in contact with the bark of trees.

4.3 Edging

Edging of all sidewalks, curbs and other paved areas shall be performed once every other mowing. Debris from the edging operations shall be removed and the areas swept clean. Caution shall be used to avoid any flying debris. Safety glasses and ear protection shall be worn during this operation.

4.4 Reporting of Damage

Any vandalism or storm damage to the areas, or to any of the trees, shrubs or objects located in the park areas shall be reported to the City as soon as possible by the contractor. Also, any damage done by the contractor shall be reported to the City as quickly as possible.

4.5 The contractor will be responsible for cutting privately owned property following notification by the City. These cuttings will be the result of the City having cited the owners for a "tall grass violation". The contractor is responsible for mowing the site within seven (7) calendar days following notice by the City.

4.6 Schedule & Hours of Work

The contractor will be responsible for contacting the designated Recreation & Parks staff person on Monday of each week during the mowing season to propose the weekly mowing schedule. The contractor may perform the work on weekdays (Monday through Friday between the hours of 7:30 a.m. and 4:00 p.,. Special permission must be given by the designated Recreation and Parks staff contact to allow work to be performed on the weekends (Sat. & Sun.) In the event that work is performed on the weekends, the hours of operation shall be 9:30 a.m. to 5:00 p.m. **School sites cannot be mowed between 7:30 a.m. and 3:00 p.m. Monday - Friday during the school year (approximately September 1 through June 18).**

4.7 Equipment

The contractor is responsible for providing, maintaining and transporting all necessary equipment, and fuel for its use, in connection with the program of mowing and trimming described in the Agreement. All tools and supplies necessary for performing the work required by this Agreement will be provided by the contractor. Heavy equipment (example: riding mowers) are not to be used when soil is wet. The contractor shall be responsible for repairing any ruts that are created by equipment that is inappropriately used for the soil conditions. **No vehicular equipment (cars, trucks, etc.) is allowed off of paved surfaces on City properties.**

LANDSCAPING TO BE PROVIDED IN THE DRAINAGE DITCH LOCATED ON NORTHERN VIRGINIA REGIONAL PARK AUTHORITY PROPERTY IS INTENDED TO ENHANCE INFILTRATION AND POLLUTANT REMOVAL OF STORM RUNOFF. LANDSCAPE INSTALLATION IN THIS AREA IS TO BE DEVELOPED PER AGREEMENT BETWEEN THE CITY OF FALLS CHURCH AND THE NORTHERN VIRGINIA REGIONAL PARK AUTHORITY (NVRPA). SEE SHEET 21 FOR A COPY OF THIS AGREEMENT. ALL WORK IN ASSOCIATION WITH RELANDSCAPING OF THE DRAINAGE DITCH SHALL BE COORDINATED WITH REPRESENTATIVES OF BOTH THE CITY OF FALLS CHURCH AND NVRPA.

DRAINAGE DITCH LANDSCAPING NOTES:

1) EXISTING VEGETATION WITHIN THE DITCH AREA IS TO BE ERADICATED PRIOR TO INSTALLATION OF ANY NEW PLANT MATERIAL.
2) EXISTING VEGETATION SHOULD BE CUT BACK WITHIN 1' OF GROUND LEVEL PRIOR TO APPLICATION OF HERBICIDE. REMOVE ALL EXCESS PLANT MATERIAL.
3) APPLY BROAD-SPECTRUM, GLYPHOSATE HERBICIDE PER MANUFACTURER'S INSTRUCTIONS. SELECTION OF SPECIFIC OF HERBICIDE AND METHOD OF APPLICATION SHALL BE AS ACCEPTABLE TO THE CITY OF FALLS CHURCH AND NVRPA.
4) ALLOW A MINIMUM OF SEVEN (7) DAYS AFTER APPLICATION OF HERBICIDE (OR MORE IF REQUIRED PER MANUFACTURER'S DIRECTIONS) PRIOR TO REMOVAL OF RESIDUAL VEGETATION AND TILLAGE. RESIDUAL PLANT MATERIAL SHALL ONLY BE REMOVED WHEN CONTRACTOR IS READY TO IMMEDIATELY PROCEED WITH INSTALLATION OF THE SLOPE STABILIZATION FABRIC SO THAT THE DISTURBED SLOPES OF THE DITCH DO NOT REMAIN EXPOSED. ALL RESIDUAL PLANT MATERIAL IS TO BE REMOVED FROM THE PROJECT SITE.
5) ESTABLISH SOIL pH AND FERTILITY PRIOR TO LANDSCAPE INSTALLATION. ADD LIME AND FERTILIZER AS RECOMMENDED BY SOIL ANALYSIS. ALL INCORPORATING ACTIVITIES SHOULD BE DONE IN A MANNER THAT WILL LEAVE THE SOIL ROUGH, WHICH WILL MINIMIZE SOIL EROSION AND RAPID RUNOFF.
6) INSTALL BIODEGRADABLE SLOPE STABILIZATION FABRIC ACROSS THE ENTIRE DITCH SECTION PER MANUFACTURER'S DIRECTIONS AND DETAIL SHOWN ON SHEET 19.
7) LOCATE ALL PLANTINGS AS INDICATED ON DRAWINGS. IF OBSTRUCTIONS ARE ENCOUNTERED THAT ARE NOT SHOWN ON THE DRAWINGS, DO NOT PROCEED WITH PLANTING OPERATIONS UNTIL OWNER'S REPRESENTATIVE HAS SELECTED ALTERNATE PLANT LOCATIONS.
8) CUT AN "X" IN THE SLOPE STABILIZATION BLANKET FOR EACH PLANT TO BE INSTALLED. CUT ONLY AS LARGE AS NEEDED FOR PLANT INSTALLATION. FOLD CORNERS OF EACH CUT UNDER STABILIZATION BLANKET UNTIL PLANT IS INSTALLED. AFTER PLANT IS INSTALLED, UNFOLD CORNERS AND TACK IN PLACE AT BASE OF PLANT.
9) EXCAVATE CIRCULAR PLANT PITS WITH VERTICAL SIDES. PROVIDE PITS AT LEAST TWO TO THREE TIMES AS WIDE AS THE ROOT SYSTEM. DEPTH OF PIT SHALL BE NO GREATER THAN ROOT BALL DEPTH. SCARIFY BOTTOM OF THE PIT. REMOVE EXCESS EXCAVATED MATERIALS FROM THE SITE.
10) SET PLANT MATERIAL IN THE PLANTING PIT TO PROPER GRADE AND ALIGNMENT. SET PLANT MATERIAL NO LOWER THAN THE FINISH GRADE OR 2"-3" ABOVE FINISHED GRADE. NO FILLING WILL BE PERMITTED AROUND TRUNKS OR STEMS. BACK FILL THE PIT WITH EXISTING SOIL OR APPROVED TOP SOIL MIX. FORM A RING OF SOIL AROUND THE EDGE OF EACH PLANTING PIT TO RETAIN WATER. SET ALL PLANTS PLUMB AND STRAIGHT. SET AT SUCH LEVEL THAT A NORMAL OR NATURAL RELATIONSHIP TO THE GROUND IF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE THE PLANT IN THE CENTER OF THE PIT.
11) AFTER PLANTS ARE SET, MUDDLE PLANTING SOIL MIXTURE AROUND BASES OF BALLS AND FILL ALL VOIDS. REMOVE ALL BURLAP, ROPES AND WIRES FROM THE COLLAR OF BALLS. PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE BALL ONLY.
12) SPACE GROUND COVER PLANTS IN ACCORDANCE WITH INDICATED DIMENSIONS.
13) WATER PLANTS THOROUGHLY TO PULL SOILS AGAINST ROOT BALL AND SETTLE AIR POCKETS. ADDITIONAL SOIL MAY BE NEED, WATER AGAIN TO ENSURE COMPLETE COMPACTION.
14) DUE TO THE STEEPNESS OF THE EXISTING SLOPE, DO NOT APPLY MULCH AFTER INSTALLATION. SLOPE STABILIZATION FABRIC WILL TAKE THE PLACE OF MULCH.
15) DUE TO THE STEEPNESS OF THE EXISTING SLOPE, PROVIDE WRAPPING, GUYING AND STACKING FOR LARGE SHRUBS. THE LANDSCAPE CONTRACTOR SHALL REMOVE STAKING AND GUYING AT THE END OF ONE YEAR MAINTENANCE AND GUARANTEE PERIOD.
16) REMOVE OR CUT BACK BROKEN, DAMAGED AND ASYMMETRICAL GROWTH OF NEW WOOD. UNLESS OTHERWISE DIRECTED, PRUNE EVERGREENS ONLY TO REMOVE BROKEN OR DAMAGED BRANCHES. EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE TO PRESERVE THE NATURAL CHARACTER OF PLANT. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS.
17) UPON COMPLETION OF PLANT MATERIAL INSTALLATION, ANY DISTURBED AREAS BETWEEN THE NEW LANDSCAPING AND THE EXISTING ASPHALT TRAIL SHALL BE RE-SODDED AS INDICATED ON SHEET 8.

THIS SHEET FOR LANDSCAPING PURPOSES ONLY

NO.	DESCRIPTION	DATE	REV'D	APPR'D	DATE

REVISION

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — DAVID E. STEIGLER — Cert. No. 809 — 9/6/12 — LANDSCAPE ARCHITECT

PROJECT: WEST END PARK IMPROVEMENTS — CITY OF FALLS CHURCH, VA

TITLE: LANDSCAPE NOTES AND DETAILS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CITY PLAN # 20090407

DESIGN: PHR+A	SURVEY: PHR+A
DRAWN: SME	DATE: JUNE 17, 2009
CHECKED: DHS	SCALE: AS SHOWN
SHEET C420LND-DET 20 OF 21	FILE NO. 15907-1-0

FILE NAME: P:\PROJECT\15907\1-0\Planning\Plans\WEST END\C419-20LND-DET.dwg LAYOUT NAME: DET-2 PLOTTED: Wednesday, September 05, 2012 - 1:42pm

DOMINION VIRGINIA POWER AGREEMENT UPDATE PENDING

DOMINION VIRGINIA POWER LICENSE AGREEMENT

TE 009041006

LICENSE AGREEMENT

THIS LICENSE AGREEMENT made on the _____ of October, 2009, by and between VIRGINIA ELECTRIC AND POWER COMPANY **("Licensor")**, a Virginia corporation, and CITY OF FALLS CHURCH a body, corporate and politic **("Licensee")**.

RECITALS

A. Licensor has previously acquired certain interests in land, by easement and in fee, in the City of Falls Church, Virginia, for the construction and operation of future and/or existing facilities for the transmission of electric power, said existing facilities currently known and identified by Licensor for its own purposes as Electric Transmission Lines 251 and 266 along the W&OD Trail – NRVPA Corridor. Such easements are hereinafter referred to as the **"DVP Right-of-Way"** or **"Fee Property"** and listed here as recorded in the Circuit Court of Fairfax County, Virginia:

W&OD Trail – NRVPA Corridor [COR0525/5] found in Deed Book 4910 Page 172
Easement retained in Deed Book 168, Page 516
Fee Property found in Deed 1444 Page 131

B. Licensee proposes to install and maintain a thirteen (13) foot high sign, an eight (8) foot high sign, a six (6) foot wide concrete and asphalt trail, a culvert and plantings **("License Facilities")** in the DVP Right-of-Way or Fee Property adjacent to West End Park near the northerly side of West Broad Street and west of Grove Avenue in the City of Falls Church, Virginia.

C. Licensor is willing to grant a license to the Licensee to utilize a portion of said DVP Right-of-Way and Fee Property for such purpose.

AGREEMENT

NOW, THEREFORE, Licensor and Licensee agree that, for and in consideration of the sum of Ten Dollars ($10.00), the receipt and sufficiency of which is hereby acknowledged, Licensor does hereby grant unto Licensee a License to occupy a portion of DVP Right-of-Way or Fee Property with Licensed Facilities as hereinafter defined, subject to the provisions hereinafter set forth.

1. The above Recitals are incorporated herein by reference.
2. The minimum distance required by OSHA shall be maintained between electrical conductors and any part of the encroachment or equipment used in the installation or maintenance of the encroachment. Sag of conductors varies with changes in operating and ambient temperatures; therefore, required clearances will be based upon maximum sag. The minimum clearance shall be governed by the clearance required for the 230 kV line. See Exhibit "A".
3. Licensor access to its facilities shall not be hampered at any time by the installation, use, maintenance or presence of the encroachment. Licensor shall not be liable for damage to the encroachment resulting from exercise of its easement rights.
4. Permission for the encroachment described in Exhibit "B" does not include permission for storage on the right-of-way of material or equipment related to the encroachment.
5. No portion of any house, garage, porch, deck, shed, barn, playhouse or any other type of structure whatsoever shall be permitted on the right-of-way.
6. Licensee shall restore any erosion or settling on the DVP Right-of-Way or Fee Property related to the installation or maintenance of the encroachment. Licensee shall comply with all state and local erosion and sedimentation control laws, and shall not adversely affect grade elevations and water drainage patterns.
7. Licensee shall notify Licensor's Rights-of-Way Management Representative at (703) 375-5917 (Herndon Office) if any counterpoise [ground wire buried 18 to 24 inches deep] is damaged, cut, or severed, so necessary repairs can be made by Licensor the cost of which shall be reimbursed by the Licensee.
8. Licensee shall be responsible for all associated costs for the repairs of Licensor facilities (including but not limited to structures, guys, anchors or counterpoise) damaged by Licensee, his employees, contractors or agents.
9. If the encroachment is determined to be unsafe by the Licensor at a future date, the unsafe condition shall be corrected or removed at Licensee's expense within forty-five (45) days after written notification by Licensor. If not so corrected or removed by Licensee, the unsafe condition may be corrected or removed by the Licensor at Licensee's expense without liability by the Licensor for any resulting damage.
10. This Agreement is not a perpetual easement and in no way reduces the Licensor's rights under the easement(s) identified above. The Licensor may at any time exercise its easement rights in a way that conflicts or interferes with the encroachment described above. Upon notice from the Licensor, the Licensee will promptly modify, rearrange or remove the encroachment to enable the Licensor to exercise its easement rights without conflict or interference with the encroachment. Licensee will be responsible for the cost of any such modification, rearrangement or removal. If Licensee fails to so modify, rearrange or remove the encroachment within 45 days after notice by the Licensor to do so, the Licensor may modify, rearrange or remove the encroachment without liability for damage resulting therefrom, and Licensee shall promptly reimburse the Licensor for the cost of such modification, rearrangement or removal.
11. Licensee shall begin physical installation of encroachment within one (1) year of the date of execution of this letter. If installation does not begin within that period, this Agreement shall become invalid. A new letter of request addressing encroachment will be required before further consideration.
12. Licensee shall give at least five (5) days advance notice, except in emergencies, of any activities being performed within the DVP Right-of-Way or Fee Property to Licensor's Rights-of-Way Management Representative at (703) 375-5917 (Herndon Office) so that the Licensor, at its discretion, may have an inspector present while the work is in progress. and Licensee pays the costs of the inspector.
16. Licensor will not be responsible for trees, shrubs or other vegetation planted within the DVP Right-of-Way or Fee Property damaged as a result of its construction or maintenance work.
17. The planting of the trees, shrubs and other vegetation shall conform to the Licensor's guidelines. See exhibit "D". Licensee will remove shrubs or trees exceeding the Licensor's limitations, or otherwise deemed necessary by Licensor within thirty (30) days after notice by the Licensor. If not removed by Licensee within thirty (30) days, Licensor may remove such vegetation at Licensee's expense without liability for any resulting damages.
18. Motor vehicles may be parked on DVP Right-of-Way or Fee Property provided that:
    a. They do not exceed a height of 13 feet 6 inches.
    b. They are not house, office, or construction trailers.
    c. They do not carry explosives or flammable cargo.
    d. They are operative and the parking is of a transient nature.
    e. They shall have current inspection decals and shall not violate any local ordinances.
19. The proposed asphalt and concrete trail shall follow the existing ground line contours. No more than two (2) foot of fill as shown on the plan referenced below may be placed on the DVP Right-of-Way or Fee Property.
20. Should it be necessary to verify the final grade of the proposed cut/fill, then it will be the responsibility of Licensee to reimburse Licensor for all actual costs. If the verification reveals that the cut/fill/grading was not done as approved, then Licensee is responsible for all costs involved with correcting the problem(s).
21. Drainage ditches of such depth as to obstruct travel along or access to the DVP Right-of-Way or Fee Property are not permitted unless such ditches are provided with culverts installed and maintained at no cost to Licensor.
22. Culverts shall be designed to support traffic crossings by heavy construction and maintenance equipment, and shall be capable of withstanding AASHTO designation HS20-44 wheel loadings. Any culverts beneath access roads must be sized to accommodate water flows and prevent pooling in the DVP Right-of-Way or Fee Property.
23. Licensee may remove topsoil and gravel from portions of the DVP Right-of-Way or Fee Property not occupied by Licensor transmission facilities. In such cases Licensee must maintain a minimum island of undisturbed material with a twenty-five (25) foot radius on all sides of said facilities. The slope ratios, normally 3:1 or less, and transmission line access lanes must be maintained.
24. Licensee shall not assign or grant by license, permit or otherwise to any other party any rights, privileges or encroachments of any nature in, on, or with respect to the Licensed Facilities without the prior written approval of Licensor. The obligations and requirements to which Licensee is subject under this Agreement shall be binding upon the successors and assigns of Licensee, and no assignment or grant shall be effective until the assignee or grantee has notified Licensor in writing of its acceptance of the obligations and requirements of Licensee under this Agreement. If Licensee is not the owner of the property on which the License Facilities are to be located, then Licensee is responsible for obtaining necessary permission for the encroachment from the owner.
25. All payments, notices, requests, demands and other communications required or permitted to be given hereunder shall be deemed to have been duly given if in writing and delivered personally, or mailed first class, postage prepaid, registered or certified mail, as follows:

    If to Licensee: City of Falls Church
    223 Little Falls Street
    Falls Church, VA. 22046
    Attention: Mr. Howard Herman

    If to Licensor: Dominion Virginia Power
    701 East Cary Street, 12th Floor [23219-3927]
    P.O. Box 2666
    Richmond Virginia, 23261
    Attention: Electric Transmission Right-of-Way Management

    In the case of any change of such mailing address, the party so changing a mailing address shall give notice thereof to the other party in the manner herein above provided. In the absence of any such notice, notice mailed in accordance with the foregoing section shall be deemed sufficiently given and served for all purposes.
26. Licensor shall not be responsible or liable for injuries (including death) or damage to property when such injuries (including death) are caused by or result from Licensee's use of the Licensed Premises under the terms of this License Agreement and are not solely due to the negligence of Licensor. Licensee shall require in all contracts with its contractor(s) that such contractor(s) must indemnify the Licensor against any loss, damage or liability arising from work performed or permitted by the Licensee or its contractor(s) on Licensed Premises. Such indemnification shall also include the cost of defense, including attorney fees and expert witness fees. Licensee shall also require in all contracts with it contractor(s) that such contractor(s) must have insurance coverage for such indemnification, listing Licensor as an additional insured, in an amount of the greater of (a) the contractor's total existing liability coverage (including umbrella policies) or (b) Two Million and 00/100 Dollars ($2,000,000.00). Licensee shall obtain from its contractor(s) a certificate of insurance demonstrating such insurance coverage and deliver a true and accurate copy of the certificate of insurance to Licensor before any work is performed by such contractor(s) on the Licensed Premises. Such insurance policies shall also contain a requirement of ten (10) days written notice to Licensor before any effective date of cancellation. No contractor(s) shall perform work on the Licensed Premises without full compliance with the terms of this paragraph.
27. This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior and contemporaneous negotiations, covenants, representations, agreements, and understandings of the parties hereto relating to the subject matter hereof.
28. The failure of any party at any time or times to require performance of any provisions hereof shall in no manner affect the right at a later time to enforce the same. No waiver by any party of any condition, or of any breach of any term, covenant or representation contained in this Agreement, in any one or more instances, shall be deemed to be, or construed as, a further or continuing waiver of any such condition or breach or a waiver of any other condition or of breach of any other term, covenant, or representation.
29. In exercising the rights granted by, and undertaking activity pursuant to, this Agreement, Licensee shall act in accordance with the laws of the Commonwealth of Virginia and any other governmental body, state or federal having jurisdiction over such matters.
30. Should any one or more of the terms, provisions, covenants or conditions of this Agreement be held to be void, invalid, illegal or unenforceable in any respect, the same shall not affect any other term, provision, covenant or condition contained herein.

IN WITNESS WHEREOF, the parties hereto have caused this License Agreement to be executed on their behalf by their duly authorized representative as of the date first above written.

VIRGINIA ELECTRIC AND POWER COMPANY

By _____
Charles D. Hardy
Manager
Electric Transmission Right-of-Way

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF _____, to wit:

I, _____, the undersigned Notary Public in and for the Commonwealth of Virginia at large, do hereby certify that **Charles D. Hardy**, whose name is signed to the foregoing document on behalf of Virginia Electric and Power Company, appeared before me in the jurisdiction aforesaid and personally acknowledged the foregoing License Agreement.

GIVEN under my hand and seal this _____ day of October, 2009.

My commission expires: _____

CITY OF FALLS CHURCH

By _____
Howard Herman
Department of Community Services – General Manager

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF _____, to wit:

I, _____, the undersigned Notary Public in and for the Commonwealth of Virginia at large, do hereby certify that **Howard Herman**, whose name is signed to the foregoing document on behalf of City of Falls Church, personally appeared before me in the jurisdiction aforesaid acknowledged the foregoing License Agreement.

GIVEN under my hand and seal this _____ day of October, 2009.

My commission expires: _____

DOMINION VIRGINIA POWER LETTER OF PERMISSION

Dominion

Dominion Virginia Power
701 East Cary Street, Richmond, VA 23219
Mailing Address: P.O. Box 26666
Richmond, VA 23261
Web Address: www.dom.com

November 5, 2009

Ms. Suzanne M. Cordlessa
Planning Director and General Manager
City of Falls Church
Harry E. Wells Building
300 Park Avenue
Falls Church, VA 22046

Re: West End Park, Falls Church, VA
Site Plan

Dear Ms. Cordlessa:

Virginia Electric and Power Company is the owner of a parcel of land located between West End Park and the Washington and Old Dominion Trail. We have reviewed the proposed site plan and found the improvements shown on our land to be acceptable to us. Consequently, we will enter into a License Agreement with the City of Falls Church agreeing to the improvements on our easements and fee parcel per the conditions and exhibits incorporated into that agreement.

Sincerely,

VIRGINIA ELECTRIC and POWER COMPANY
(Dominion Virginia Power)

Charles D. Hardy
Manager
Electric Transmission Right-of-Way

Cc: Howard Herman, City of Falls Church
David Steigler, PHR+A
Gary Dorman, Sr. Rights-of-Way Management Representative

VERIZON CONSENT AGREEMENT

Outside Plant Planning & Engineering

verizon

1880 Campus Commons Drive, 2nd Floor
Reston, VA 20191

November 6, 2009

Patton Harris Rust & Associates
Attention: David H. Steigler, CLA, AICP
Director of Land Planning and Landscape Architecture
14532 Lee Road
Chantilly, Virginia 20151

RE: No Conflict Letter for West End Park, City of Falls Church;
PHR+A F-15907-1-0

Dear Mr. Steigler,

Per your request, Verizon has visited the West End Park, City of Falls Church project site and researched our records to identify Verizon Virginia, Inc. facilities within the project boundaries. We have also reviewed your pre-final design plans. There is no conflict at this time.

Please take note of the following items.

- Verizon will still be able to access the identified manhole even though tree clearing is necessary.
- Caution needs to be exercised with new tree plantings over the Verizon encased duct bank due to the possibility of future damage to our structure.
- Since Verizon has an easement in this area, we have the right to remove any trees within the Verizon easement in order to maintain our structure.
- Verizon agrees with the need to perform test holes in the area where the new water structure is being placed across the Verizon duct bank. A minimum of 1' clearance is required for future maintenance and to avoid any damage to the Verizon duct bank during construction. However, to avoid costly relocations Verizon will give strong consideration to modifying these requirements for this project.

If there are further concerns about this matter contact me on 703-390-3415 or via e-mail reginald.t.lawson@verizon.com

Regards,

R. Todd Lawson
Supervisor Engineering
1880 Campus Commons Drive, 2NE Floor
Reston, Virginia 20191

NORTHERN VIRGINIA REGIONAL PARK AUTHORITY LETTER OF PERMISSION

CELEBRATING 50 YEARS ...
Northern Virginia Regional Park Authority
5400 Ox Road, Fairfax Station, VA 22039 | 703-352-5900 | Fax: 703-323-0965 | www.nvrpa.org

November 12, 2009

NOV 13 2009

Howard Herman
Recreation & Parks Division Director
City of Falls Church
223 Little Falls Street
Falls Church, VA 22046

RE: Permission for Landscaping and Connector Trail on the W&OD Railroad Regional Park at West End Park

Dear Mr. Herman:

At your request, the Northern Virginia Regional Park Authority ("Authority") hereby grants permission ("Permit") to the City of Falls Church ("City") to construct, install, and maintain a connector trail and landscaping (collectively the "improvements") on the W&OD Railroad Regional Park ("W&OD Trail" or "Property"). The improvements are shown on the plans prepared by Patton Harris Rust & Associates titled "West End Park Improvements," sheets 1 through 21, dated June 17, 2009 and revised through November 12, 2009, hereby incorporated as Exhibit A. This Permit is subject to the following conditions:

1. The City shall keep the W&OD Trail open, safe, and continuous all times during construction. Necessary safety precautions shall be employed to protect trail users, including warning signs, flagmen and safety fencing as appropriate. The limits of construction areas shall be separated from trail users by safety fencing. The City shall place signs on the Property warning trail users of construction ahead.
2. The City shall notify the Authority at least 48 hours in advance of construction work or maintenance on the Property, except in the case of an emergency. A preconstruction meeting with the City's contractor(s) must be held prior to any work on the Property. In addition, the City shall notify the Authority when work and restoration are complete so that a final inspection can be made. No work shall be done on weekends or holidays.
3. The connector trail within the 100-foot wide Property shall have a minimum 2-inch thick asphalt surface after compaction and shall be underlain by compacted 6 inches of 21-A gravel. This sub-base shall have a minimum 95% compaction. Additional sub-base material may be required over soft sub-grade. The bottom of the excavation shall be compacted with a pine tamper, jumping jack or approved alternative prior to gravel and asphalt placement.
4. The shoulder of the connector trail shall be backfilled with 21-A stone to a depth of 2 inches by 1 foot wide and backfilled with imported topsoil and seeded in accordance with Authority specifications.
5. The connector trail shall have a maximum 2% cross slope and a maximum 5% running slope within the Property.
6. The connector trail shall intersect the W&OD Trail with straight edges (without flaring).
7. The connector trail pavement shall have a smooth, virtually undetectable transition where it meets existing W&OD Trail pavement. The transition shall have an even and clean joint.
8. The City shall ensure that the improvements and grading do not cause areas on the Property to hold water. The City shall be responsible for any erosion or drainage problems, which may occur as a result of the City's use of the Property, and shall restore any eroded areas until stabilized.
9. Vehicles, tools, equipment and materials shall be removed from the Property at the end of each workday and shall not be stored or stockpiled on the Property at any time. All debris and materials left over from construction, installation, and maintenance shall be removed. No excavation shall be left open overnight.
10. Access to the work area shall be from the City's property, and not along the W&OD paved trail. Construction equipment on the Property shall be approved by the Authority prior to construction. Personnel vehicles shall not be parked on the Property at any time.
11. The City shall promptly restore disturbed construction areas and adjacent areas to their original or better condition in compliance with compaction, seeding, replanting and other applicable standards used by the Authority. The Authority may restore any areas in case of neglect by the City. The City shall pay the cost of such restoration, including the cost of inspection and supervision.
12. The City shall maintain the connector trail and landscape improvements installed on the Authority's property under this Permit.
13. As Dominion Virginia Power holds certain rights over and on the property, the City must obtain its written permission for the connector trail and landscaping and provide a copy to the Authority prior to work on the Property.
14. The City shall take necessary steps to locate and protect all existing utilities within the work area against damage, including having the work area marked by Miss Utility prior to any construction or maintenance activity.
15. The City shall provide all contractors on the project with a copy of this Permit and shall ensure that all construction personnel abide by the provisions contained herein. All contractors shall have a copy of this Permit on site.
16. Connector trail compliance with the Americans With Disabilities Act shall be the responsibility of the City.
17. The City shall take adequate precautions to insure the safety of the general public as well as the City's and Authority's employees, to protect property, and to assure safe operation by the City's employees, agents and subcontractors. Whenever the City's activities create a serious hazard to public safety or welfare, the City shall take all reasonable actions immediately to abate the hazard. Authority shall have the right to direct the City to halt any activity on the Property for noncompliance with the provision of this Permit or when Authority believes it to be necessary to protect the public's welfare or safety, until such deficiencies or violations are corrected. The City shall comply with any lawful directive given by Authority staff.
18. Construction of the improvements shall be completed within two years of the date of this Permit. This Permit shall remain in effect until the Authority cancels the Permit.
19. The City warrants that the City has inspected the Property and accepts it in its present condition. The Authority makes no representation or warranties, express or implied, concerning the condition of its property and shall have no responsibility for repairs and maintenance during the term of this Permit.
20. This Permit shall not be construed as a conveyance of any right, title or interest in the Property. The Authority retains the right to cancel this Permit.
21. In accordance with Article 58-29(d)(4) of the City's Code, the Authority, as owner of the Property, has no objection to joining the site plan shown on Exhibit A; however, it shall have no obligation in fulfilling the site plan requirements.

Please signify your acceptance of these conditions by signing both copies of this letter and returning one to me.

Sincerely,

Daniel Iglhaut
Land Manager

ACCEPTED:

CITY OF FALLS CHURCH

By: _____

Title: _____

Date: _____

c: Karl Mohle, Manager, W&OD Railroad Regional Park
David H. Steigler, Patton Harris Rust & Associates

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APRV'D	DATE
	REVISION					

PROFESSIONAL SEAL
COMMONWEALTH OF VIRGINIA
DAVID H. STEIGLER
Cert. No. 609
LANDSCAPE ARCHITECT

PROJECT
WEST END PARK IMPROVEMENTS
CITY OF FALLS CHURCH, VA

TITLE
CONSENT AGREEMENTS AND EXHIBITS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
14532 Lee Road
Chantilly, VA 20151-1679
T 703.449.6700
F 703.449.6714

CITY PLAN # 20090407

DESIGN	SURVEY N/A
DRAWN SME	DATE JUNE 17, 2009
CHECKED DHS	SCALE N/A
SHEET C421UTL-AGR 21 OF 21	FILE NO. 15907-1-0